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Donald G. Paterson

Standardized Stenographic Tests—
Wm. H. Woodruff

News Notes Book Reviews Abstracts

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The Scott Company's File Clerk's Test[1]

By Donald G. Paterson, *University of Minnesota*

Business men are continually demanding from research workers something practical, something applicable to their immediate problems. Here it is.

Mr. Paterson describes a practical test for file clerks which can be used effectively in an organization employing a number of these workers.

Incidentally, the paper shows what a great deal of care and of accurate, precise work is required in order to furnish management with a dependable and useful tool.

THERE is great need for the development of reliable objective methods of selecting from among applicants those who are best fitted to do any particular kind of filing work. The need is not so great if the employment manager can safely depend upon his source of labor supply to produce a sufficient number of "experienced" filing clerks to enable him to fill his requisitions promptly. In this case it is probably true that a careful interview designed to evaluate the previous experience of the applicants will be fairly satisfactory in selecting those who can make good on the job. Even so, it seems reasonable to believe that a reliable series of filing tests would be welcomed by the employment manager. The need for such tests is much greater if the employment manager is forced to hire inexperienced people for the filing jobs. In such a case the difference between those selected for the job and those rejected should consist primarily in the possession or non-possession of "filing aptitude." This aptitude for filing work is only vaguely understood and hence there are no known interviewing methods of determining it. You cannot ask the applicant if he possesses it for he probably does not know. You cannot infer its existence from the applicant's appearance,

[1] The Scott Company File Clerk Test is one of a number of tests produced by the cooperative efforts of the members of The Scott Company. This particular work as well as all of the research work of the Company was supervised by Dr. Beardsley Ruml. The work of constructing the tests and making a statistical analysis of the results was ably executed by Mr. Arthur W. Kornhauser. The writer assisted in initiating the work, in planning and carrying out part of the standardization procedure and in preparing the results in form for publication as a bulletin. This article has been prepared on the basis of all the file clerk test data and material in the research files of the company and is published with the permission of the officers of The Scott Company.

readiness of speech or manner. Obviously reliable tests of filing aptitude would meet a very real and pressing need in such employment work.

Those responsible for such employment work in two large organizations cooperating in the personnel research conducted by the Scott Company, realized the need for and the desirability of constructing a reliable set of tests for file clerks. In response to this demand the work described in this article was begun and pushed to a successful conclusion.

Careful analysis of the work performed by various types of file clerks was made in the search for those particular habits that might be supposed to make up filing aptitude. This analysis revealed four groups of file clerks: sorters, numerical filers, alphabetical filers and subject classifiers. The following complex habits or abilities were disclosed: rapid and accurate number and name discrimination, facility in classifying names according to their proper location in an alphabetical order, ability to alphabetize a list of personal and firm names disregarding first names and initials, ability to arrange a series of numbers in numerical order, ability to get the gist of a sentence or paragraph and then to classify it properly according to subject, ability to comprehend printed language (reading ability), ability to comprehend and follow written or oral directions and instructions, and finally an ability to manipulate cards, papers and folders with speed and precision (manual dexterity). While this analysis makes no claim at absolute completeness or finality yet it afforded a satisfactory working basis upon which to proceed in constructing the test. The next step consisted in outlining the requirements of the tests so that all necessary considerations would be allowed for in preparing the tests. These requirements were laid down as follows: first, the tests should have a high degree of reliability as measures of general filing ability. Second, the tests should differentiate between the four types of file clerks. Third, the range of ability measured by the tests should be wide so that the differences among the higher types of file clerks as well as among the lower grades of file clerks might be adequately disclosed. Fourth, the tests should be as brief as is consistent with the requirements of reliability, so that under the stress of routine employment conditions it would still be feasible to use them in examining applicants. Fifth, the tests should be adaptable for use in testing clerks or applicants individually or in groups. By making the tests available for examining a number of individuals simultaneously a great saving in time would result whenever a number of clerks or applicants are to be tested. Sixth, the method of giving the tests should be so simplified and standardized that the services of an expert are not required in the routine testing of applicants. Seventh, the tests should be arranged so that personal judgment concerning correct answers is eliminated; that is, the scoring should be mechanical and objective. Eighth, a simple arrangement for scoring should be provided so that the scoring could be done rapidly with chances for error reduced to a minimum. Furthermore, the scoring method should be so simple

that the services of a test expert are not required in obtaining a score for each person tested. Ninth, the tests should be so arranged as to reduce to a minimum the amount of writing necessary for answering the questions. This was desirable because speed of writing is not the ability which is to be tested. Tenth, the tests should be as independent as possible of things formally taught in school, assuming that we would find many individuals who, though possessing filing aptitude to a high degree, have not made much school progress. This also assumes that many who get into high school or even graduate from high school are lacking in an aptitude for filing work. Eleventh, the items composing the various tests should be of such a nature as to arouse the cooperative interest of clerks or applicants. This is accomplished by including only those items that are obviously related to the work a file clerk actually does on the job.

With these requirements definitely in mind the task of assembling a series of tests was begun. Various card sorting tests (manual dexterity), that have been used by other workers in testing filing clerks could not be used in this scheme because they must be given individually. This omission might seem to be a weakness in our test series but the actual results secured lead us to doubt whether card sorting tests would have added to the reliability of the series which were selected for final use. The directions and samples of the items for each test are given below by way of showing the types of tests that meet the requirements outlined in the preceding paragraph.

TEST I

On this page are some pairs of names and some pairs of numbers. If the two names or two numbers of a pair are *exactly the same*, write S on the dotted line between them; if they are *different*, write D between them.

The following samples are done correctly.

Samples: Young, L. F.		.....S.....	Young, L. F.
Abbott, W. J.		....D.....	Abbot, W. J.
	843	.....S.....	843
	625	....D.....	652
1. Bender, J. M.		.....	Bender, J. M.
2. Dredge, F. P. & Sons		.....	Dredge, F. D. & Sons
3. Johnson, W. R.		.....	Johnston, W. R.
4. Quinley, A. Mc.		.....	Quigley, A. Mc.
5. Pilzeker, Mfg. Co.		.....	Pilzeker, Mfg. Co.
6.	430	.....	430
7.	5693	.....	5963
8.	38172	.....	38173
9.	78254	.....	78254
10.	523962	.....	523692

(There are 30 items in this test, five pairs of names alternating with five pairs of numbers.)

TEST II

1. A to C inclusive
2. D to F inclusive
3. G to K inclusive
4. L to M inclusive
5. N to Q inclusive
6. R to T inclusive
7. U to Z inclusive

Take each name on this page and see what letter it begins with. If the first letter of the name is A, B, or C, write the figure 1 before the name; if it is D, E, or F, write a figure 2; if it is G, H, I, J, or K, write a figure 3; and so on, *according to the way the alphabet is divided at the top of this page.*

The following samples are done correctly.

Samples: ....5.... Orville, J. L.
....3.... Green & Co.

Begin with the first name and work as fast as you can without making mistakes.

..... Baxter, J. H.	..... Chase, Wm. E.	..... Endicott Sons
..... Goring & Co.	..... Vanadium Trust Co.	..... Quality Print Co.
..... Alden Bros.	..... Phillips, C. W.	..... Rhoades, W. G.

(There are 13 items in each column, making a total of 39 items for the whole test.)

TEST III

Below are 9 lists of 6 names each.

Look at List A first.

Write the figure 1 in the parenthesis ( ) before the name that would come *first in an alphabetical list;* the figure 2 before the name that would come next; 3 before the next; 4 before the next; 5 before the next, and 6 before the last.

Then do List B; then C; and so on.

Work carefully. If you make a mistake, cross it out but do not take time to erase.

List A	*List B*	*List C*
( ) S. G. Broadwell	( ) J. M. Yearsley	( ) M. E. Keene
( ) R. A. Blythe	( ) H. B. Vincent	( ) Wm. Shaffer
( ) Busch & Sons	( ) Walker & Co.	( ) A. E. Bassett
( ) J. E. Calhoun	( ) G. R. Ulrich	( ) L. F. Jarvis
( ) N. L. Burrows	( ) Wm. Ziegler	( ) T. L. Quimby
( ) Chapman Bros. Co.	( ) S. D. Wadsworth	( ) Gilmore Sons Co.

(There are nine lists of six names each in this test.)

TEST IV

Below are 9 lists of 6 numbers each.

Look at List A first.

Write the figure 1 in the parenthesis ( ) before the *smallest number;* the figure 2 before the next smallest; 3 before the next; 4 before the next; 5 before the next, and 6 before the largest.

Then do List B; then C; and so on.

Work carefully. If you make a mistake cross it out but do not take time to erase.

List A	*List B*	*List C*
( ) 7386	( ) 10801	( ) 321120
( ) 7735	( ) 18002	( ) 48652
( ) 7623	( ) 12401	( ) 348622
( ) 7700	( ) 10667	( ) 322012
( ) 7752	( ) 13120	( ) 350101
( ) 7738	( ) 11024	( ) 72414

(There are nine lists of six numbers each in this test.)

TEST V

On this page there are a number of sentences. After each sentence there are five words in capitals. Decide which of these five topics or subjects the sentence deals with. *Then underline the one of these five words that tells what the sentence is about.*

The following sample is done correctly.

Sample: The B. and E. Railroad carries freight only.

MANUFACTURE TRANSPORTATION FINANCE AGRICULTURE MINING

Begin with number one and work as fast as you can without making mistakes.

1. The process of making steel rails is carried on in this plant.
   ELECTRICITY MANUFACTURE FINANCE LAW MINING
2. A special meeting of the Board of Directors was held to consider a new bond issue.
   POLITICS LAW TRANSPORTATION FINANCE CONSTRUCTION

(There are 25 sentences to be classified topically in this test.)

TEST VI

Answer the questions following each of the paragraphs below. Your answers are to be based on the paragraph. Read the paragraph as often as you need to.

(1) On March 15th, 400 representatives of builders, real estate financiers, building material dealers, and labor union officials attended a meeting called by the Mayor in the City Hall to discuss building plans to solve the present housing shortage.

1. Who called the meeting? *Answer*.....
2. What kind of plans were discussed? *Answer*.....
3. Where was the meeting held? *Answer*.....
4. On what date did it take place? *Answer*.....
5. How many people attended the meeting? *Answer*.....

(There are six such short paragraphs each with five questions making a total of thirty questions for the test.)

After the tests had been constructed steps were taken to give them a preliminary trial in order to establish time limits for each test and to discover whether the tests would probably be satisfactory in differentiating between good file clerks and poor file clerks. The tests were therefore given to ten persons who were either high school or college graduates and to nine clerks of varying ability doing different kinds of filing work. This preliminary trial was encouraging for it demonstrated that the test scores disclosed wide differences between different individuals as well as a marked difference between subject file clerks and alphabetical file clerks.

The next step may be labelled "standardization" and to show how carefully this work must be carried out it seems desirable to include the detailed instructions that were drawn up as a guide during this phase of the work.

INSTRUCTIONS FOR THE STANDARDIZATION OF THE FILE CLERK'S TEST

INTRODUCTION

Before the File Clerk's test can be of value in employment work, it is necessary to "test the test" or in other words to standardize it. To do this properly, it is necessary to carry out the following steps in a uniform manner:

1. Each test is to be given under the same conditions regardless of who gives the test, who takes the test or where the test is given.

2. Test at least one hundred filing clerks in at least four different companies in order to:

a. Discover whether the test results check up with the known ability of experienced file clerks,

b. Discover whether the results on the different tests show important differences among various types of file clerks.

The present File Clerk's Test has been tried out in a limited way. This preliminary trial demonstrated that the test gives promise of differentiating between various types of file clerks and that it also differentiates between file clerks of excellent ability and those of only mediocre ability. This preliminary trial also established the proper time limits for each test.

TEST PROCEDURE

The File Clerk's Tests can be given in groups or individually. If they are given in groups, see that each person is supplied with a pencil, is cautioned not to look at the paper of any other person and not to talk to others in the room.

Before giving the tests to either an individual or to a group of file clerks, it is necessary to secure their interest and cooperation in doing their very best. The following explanation should be made: "We are asking you to take this test in order that standards may be established for the use of the employment office in the selection of future applicants. Your ability at filing work is known, so you see the tests are not going to tell us anything about you. As a matter of fact you are going to tell us something about the tests. These tests will have nothing to do with your job—you are simply asked to aid us in testing the test itself. The tests are being given in a number of other companies to filing clerks and of course you are anxous to show that the filing clerks in Company ———— are as quick or quicker than those in other companies."

When this introductory statement has been made, direct the attention of the file clerks to the front page of the test. Have each item on this page filled in by each clerk. In doing this it is best to take each item up separately and to allow time for each item to be filled out before passing to the next. It is especially important that these clerks classify themselves correctly in answering the question: "Just what work do you do?" The following four types of filing should be carefully outlined:

1. Sorting mail, bills, checks, etc. by number or by name.

2. Filing cards or correspondence by number. Those who do such work should classify themselves as "Numerical Filers."

3. Filing cards or correspondence by name. Those who do such work should classify themselves as "Alphabetical Filers."

4. Classifying mail, correspondence, etc. by subject. Those who do such work should classify themselves as "Subject Classifiers."

Special care should be taken to have the grade reached in school correctly indicated and the age at which the individual left that grade entered on the proper line.

After the first page is filled in, the directions at the bottom of the page should be read aloud.

Begin the test proper by saying: "From now on you will do all the work. All I do is to tell you when to go ahead and stop. All right, turn over the page to Test One and do just what it says. Go ahead." Note on a piece of paper the positions of the minute and second hands of your watch and then at the end of *exactly two* (2) minutes, say "Stop. Now do Test Two on the next page. Go ahead." Again note the time of beginning on a piece of paper and at the end of *exactly two* (2) minutes, say: "Stop. Now do Test Three on the next page. Go ahead." Note the time and allow exactly three (3) minutes for this test. Continue as before with the remaining tests except that before starting Test Five attention should be called to the fact that the test is continued on the next page. The same warning should be given before starting Test Six.

Time limits for each test are as follows:

	minutes
Test I	2
Test II	2
Test III	3
Test IV	3
Test V	1½
Test VI	3½
Total time all tests	15

At the end of the last test, have the papers passed to the front counting the papers to see that all are there. The papers should also be inspected to see that the front page is correctly filled in.

All those who have previously taken the Scott Company Mental Alertness Tests (Series I)[2] should be excused. Those who have not been given the Mental Alertness Tests should then be given these tests. Time can be saved at this point by neglecting to have the first page of the Mental Alertness tests filled in. The name of the file clerk will be sufficient.

After the tests have been given and *before they have been scored*, it is necessary to determine the *trade status* of each file clerk. The *trade status* is to be determined after consultation with supervisors and others who are able to describe the accomplishments of each file clerk. *The success of the standardization will depend upon the accuracy of this trade status classification.* A number of things need to be taken into consideration in determining *Trade Status*. For the sake of uniformity, we distinguish between six grades of filing ability, *i.e.*, Trade Status 6 indicates highest ability and Trade Status 1 indicates poorest ability. The following outline is suggestive:

Trade status

1. .... One who has had no experience in filing work and whose previous accomplishments do not indicate an ability to do satisfactory filing work.
2. .... One who has had less than three months experience and whose progress in learning filing is slow.
3. .... One who has had from three months to six months of continous filing experience and whose work is fairly satisfactory.
4. .... One who has had from three months to six months of continuous filing experience and whose work is entirely satisfactory.
5. .... One who has had more than six months experience and whose work is entirely satisfactory.
6. .... One who has had more than six months experience and who is unusually quick and accurate.

The above outline is *suggestive only*. The following examples will indicate the kind of judgment that must be exercised in determining Trade Status:

Case 1. Miss C., age twenty-six, university graduate in library methods, main occupation—general librarian for four years and three months, present occupation is *subject classifier*, on this job only three days at time of test, supervisor states that she has taken hold of the work in a very satisfactory manner. *Trade Status 5* was assigned on the basis of education and previous occupational experience as librarian necessitating constant attention to the subject classification of books. Her actual length of experience as a *subject classifier of correspondence was only three days, yet Trade Status 5 was assigned.*

Case 2. Miss M., age twenty-one, high school graduate at 17 years of age, school teacher for two years and a half, main work has been filing *names alphabetically* for six months continuously, supervisor states her work to be very satisfactory. *Trade Status 5* was assigned.

Case 3. Miss R., age twenty-four, second year in High School at 17 years of age, factory inspection work for two years, half time general clerical work and half time on *alphabetical filing* for nine months, supervisor states her work to be satisfactory. *Trade Status 3 was assigned* because actual filing experience was really less than six months and previous occupational experience has been totally unrelated to filing work.

[2] See article by A. W. Kornhauser concerning this test in Journal of Personnel Research, Vol. 1, No. 3, 1922, pp. 103–121.

Case 4. Miss Y., age eighteen, second year of High School at 16 years of age, telephone operator for 6 months, filing work (messenger, sorter, filing clerk, general work) for 3 months, supervisor states that she is not very intelligent, is inaccurate and is not much more than an errand girl. *Trade Status 1 was assigned.*

The Trade Status should be entered in pencil at the top of the first page following the written words "Trade Status." The Mental Alertness score should also be entered following the written letters "M.A"

When all of the available file clerks have been examined and the Trade Status of each determined the blanks should be sent to The Scott Company Laboratory for scoring, analysis of results, etc. The Laboratory will then report the results of the standardization to each of the employment departments with recommendations concerning the use of the test for employment purposes.

THE SCOTT COMPANY LABORATORY.

Attention of the reader is directed especially to the instructions concerning the determination of trade status which is used in checking up on the validity of the tests as measures of filing ability. Obviously carelessness or lack of skill and judgment in determining the actual trade status of each clerk must necessarily lead to disappointing results, for even though the tests were one hundred percent correct yet when checked up with an inaccurate trade status classification we should find little or no correspondence between scores on the tests and the judged ability of the clerks. The importance of this matter has been overlooked by many in deciding the value of tests. Its importance cannot be over-emphasized.

We were fortunate in receiving accurate judgments from a company employing a full time personnel research worker who was able to secure complete information concerning each file clerk from the department heads and supervisors. This included age, schooling, amount of business experience, amount and kind of experience of filing work, amount of filing experience within the company and estimate of special and general value of filing clerk in present position. With this information the research worker then carefully weighed and evaluated all of the data concerning each clerk before a final judgment of trade status was arrived at. The success of the present series of filing tests was due as much to the skill and judgment of this research worker in furnishing us with valid trade status ratings as it was to the careful work that was done in analyzing the abilities of file clerks and constructing the proper tests of those abilities.

SCORING THE FILE CLERK TEST

Scoring the test is a mechanical process that can be done by any clerk who is reasonably accurate. Personal judgment is ruled out and the work of correcting blanks is speeded up by the use of stencils and scoring keys. The use of a red or blue pencil increases the accuracy of scoring. A stencil or key is provided for correcting each test. The table on page 555 gives the details of the scoring method.

ANALYSIS OF THE RESULTS

One hundred and twelve file clerks in four companies were given the tests as part of the standardization pro-

cedure. The scores ranged from 5 to 155 with a mean or average score of 68. Approximately 25 per cent made scores above 105, another 25 per cent made scores less than 43 and the remaining 50 per cent made scores ranging between 43 and 105. The actual distribution of these scores is shown in figure 1. This widespread distribution is evidence that the tests are disclosing large differences between the various clerks and is considered to be a point in favor of the usefulness of the tests. If the tests themselves are actually measuring important abilities then the greater the differences disclosed the more valuable the tests for classification purposes.

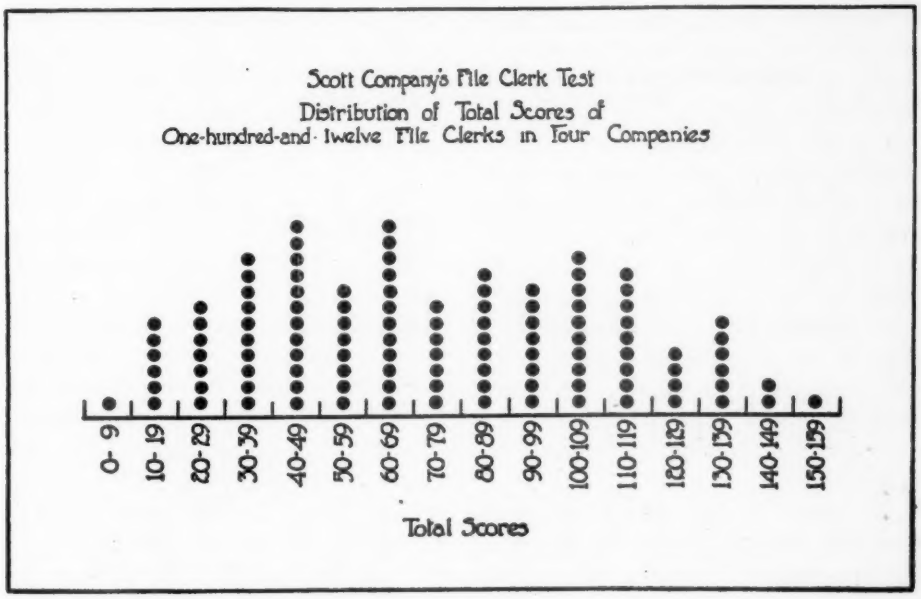

FIG. 1. SHOWING THE DISTRIBUTION OF TOTAL SCORES IN THE FILE CLERK TEST
Each dot represents a file clerk.

Details of scoring method

TEST	NUMBER OF ITEMS	METHOD OF SCORING	WEIGHT TO BE GIVEN	TOTAL POSSIBLE SCORE
Test I.....	30	Right minus wrong	1	30
Test II.....	39	Number right	1	39
Test III....	9	Number right	3	27
Test IV.....	9	Number right	3	27
Test V.....	25	Number right	1	25
Test VI.....	30	Number right	1	30
Total possible score.....				178

RELATION BETWEEN TEST SCORES AND TRADE STATUS RATINGS

The next step in the analysis of the results involved the comparison of test scores and trade status ratings of the file clerks. No ratings of trade status were secured from one company and the trade status ratings secured from two companies were of doubtful

value because they represented the offhand opinion of a large number of department heads each having his own standard of judgment. Even so, the scores in the File Clerk Tests agreed fairly well with the ratings of trade status secured from the supervisors in these two companies.

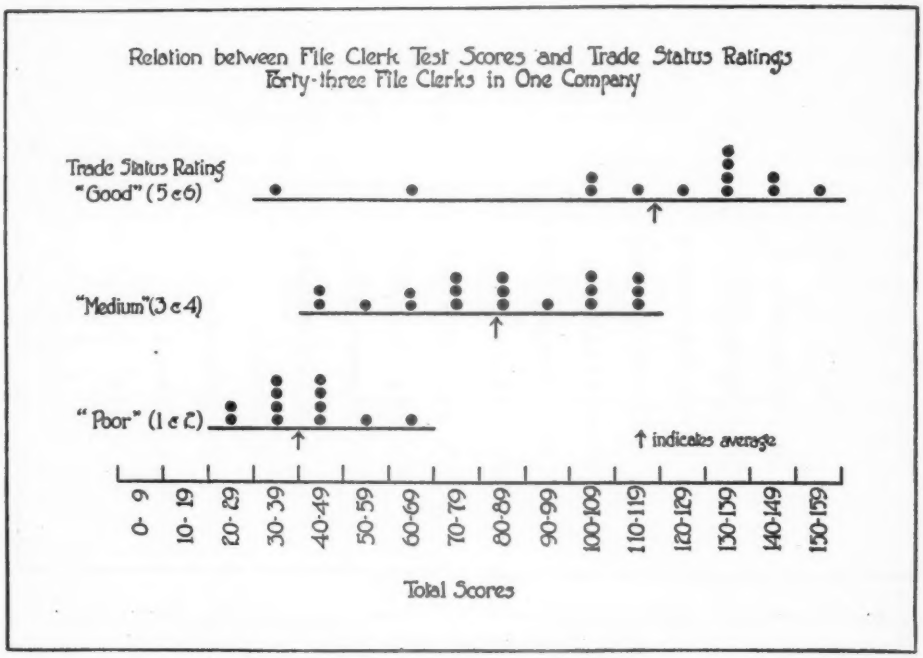

FIG. 2. SHOWING THE RELATION BETWEEN FILE CLERK TEST SCORES AND TRADE STATUS RATINGS OF 43 FILE CLERKS IN ONE COMPANY

Each dot represents one file clerk. Those given a trade status rating of 5 or 6 are grouped together and labelled "Good," trade status rating of 3 or 4 are grouped as "Medium," and those rated 1 or 2 are grouped as "Poor." The product moment correlation between trade status and score in the test is +0.82.

Experience in army trade test work had demonstrated over and over again the inability of supervisors and foremen to give accurate trade status ratings. This is what one would expect if the fact is kept in mind that supervisors make their judgments of workers not on the basis of general trade status but in terms of whether A or B can do this, that or the other specific job. The judgments are seldom in terms of what A or B can do in comparison to workers C, D or E. The latter sort of judgment is essential for proper trade status classifications and unless there is available a person who is trained in making such judgments on the basis of all relevant facts the attempt to secure valid trade status ratings might as well be given up. As noted in a preceding section of this article valid trade status ratings of 43 workers were secured from one company. The relation between total

scores in the tests and trade status ratings are shown in figure 2. The actual Pearson Product Moment Correlation[3] between test scores and trade status ratings of these 43 clerks is + 0.82. The size of this correlation as well as an inspection of the scatter table shows that there is a very close relation between test score and trade status rating. Another way of showing this relationship is to compare the average scores of "Good," "Medium" and "Poor" file clerks. The following tabulation gives this data:

Average score of file clerks

	points
Rated as "Good"	118
Rated as "Medium"	84
Rated as "Poor"	40

The actual relationship would be even closer were it not for the fact that two individuals who are among the best of the file clerks fell down in the tests. Both of these clerks made low scores in the Mental Alertness tests and it is possible that their high trade status ratings may have been earned on the basis of an extraordinarily long experience in a particular filing job. One of these clerks was labelled as "nervous" when the ratings were received by the laboratory. Of course it is possible that both clerks may really possess expert filing ability in which case we would frankly admit that the tests are in error in these two cases. No method so far devised can be absolutely perfect in its operation where human beings are concerned. In spite of these two exceptions it is apparent that *these filing tests classify these file clerks according to their proven ability with remarkable exactness.* This guarantees a very great probability that *the tests can be used to predict the future ability of unknown applicants with considerable accuracy.* There is every reason to suppose that the use of these tests in an employment department would serve to increase the accuracy of the process of hiring filing clerks. That the tests should not be the *sole* means of selection will be evident in a later section of this article.

The agreement or correspondence between the Mental Alertness test scores and trade status ratings of these 43 clerks was not as great as that shown above. The actual correlation was +0.63 which indicates a *tendency* for the better file clerks to make high scores in the Mental tests. Conversely those who lack filing aptitude or ability *tend* to make low scores in the mental tests. There is also a general tendency for those who make high File Clerk Test scores to make high scores in the mental tests, whereas those who make low File Clerk Test scores are likely to make low scores in the mental tests. The correlation between the two is +0.68.

So much for *general tendencies* as revealed by the correlations. Study of the *exceptions* is instructive in

[3] This correlation was computed from a scatter table showing the location of each clerk on the basis of a six step trade status scale and a fourteen step test score scale. Formula used:

$$r = \frac{\frac{\Sigma x'y'}{N} - C_x C_y}{\sigma_x \sigma_y}$$

as given in H. O. Rugg's "Statistical Methods Applied to Education," page 269.

revealing the relative values of the two kinds of tests in measuring aptitude for filing work. Analysis of those who score high in the File Clerk's Test and low in the Mental Alertness Tests as well as analysis of those who make low File Clerk Test scores and high Mental Alertness Test scores indicate that the File Clerk Test score gives a more reliable indication of filing ability. Seven of the eight clerks who made a relatively high File Clerk score and a relatively low Mental Alertness score are actually given high trade status ratings. On the other hand, nine of the eleven clerks who made high Mental Alertness scores and low File Clerk scores are actually rated as having poor ability on the job. This evidence indicates that a person may be high in Mental Alertness and yet make a poor file clerk. The reverse also seems to be true: that is, a person may be comparatively low in Mental Alertness and still show ability as a file clerk. The File Clerk Test, therefore, is of greater value than the Mental Alertness Test for the detection of these two classes of persons.

It should be borne in mind that these two classes of persons are exceptions to the general rule. As a matter of fact the correlations noted before show that there is a fairly close agreement between scores in the File Clerk Test and scores made by the same clerks in the Mental Alertness Tests. The usefulness of both tests in the selection of file clerks may be summarized as follows:

1. The Mental Alertness Test *alone* gives a fairly good indication of probable ability *to advance to more responsible work* of a clerical or minor executive nature.

2. The File Clerk Test *alone* gives a better indication of specific ability as a file clerk.

3. Both tests should be used in selecting file clerks and should be supplemented by all other possible information concerning the applicant or employee in order that proper consideration may be given to all of the factors involved.

CLASSIFYING FILE CLERKS ACCORDING TO KIND OF FILING WORK

The particular kind and grade of file clerk ability desired varies for the four different classes of Sorters, Numerical Filers, Alphabetical Filers and Subject Classifiers. Tests that would definitely indicate just what kind of filing work an applicant is best qualified for would greatly increase the accuracy of the selection and assignment of file clerks. The research work completed to date does not permit us to set up standards in various combinations of these tests for this specific purpose yet progress is being made along this line.

For example, in one company the alphabetical file clerks made an average total score of 97 in the File Clerk Test, while the numerical file clerks made an average total score of 74 points. The difference is not only one total score for it also appears in certain parts of the test as shown by the following summary: 53 per cent of Alphabetical Clerks score higher on Test III (an alphabetical test) than they do on Test IV (a numerical test) whereas only, 7 per cent of Numerical Clerks score higher on Test III than on Test IV. Turning the results around we find that 72 per cent of the Numerical Clerks score better on

Test IV than on Test III, whereas only 27 per cent of the Alphabetical Clerks score better on Test IV than on Test III.

There is also some evidence to indicate that subject classifiers not only make higher total scores than do the other three classes of filing clerks but they also make relatively higher scores on Tests V and VI.

For these reasons sub-scores are determined for each file clerk tested as follows:

NUMERICAL SORTERS AND FILERS	ALPHABETICAL SORTERS AND FILERS	SUBJECT CLASSIFIERS AND TOPICAL FILERS
Score in Test I = Score in Test II = Score in Test IV =	Score in Test I = Score in Test II = Score in Test III =	Score in Test V = Score in Test VI =
Series A, Total Score =	Series B, Total Score =	Series C, Total Score =

When sufficient additional data permitting definite conclusions are received, separate standards, if warranted, will be established for each type of file clerk.

GENERAL STANDARDS FOR THE FILE CLERK TEST

General standards for the classification of File Clerk Test Scores have been derived. These general standards have been derived from the distribution of scores of 112 file clerks as shown in figure 1 with special attention being given to the score limits of excellent, good, fair and poor file clerks as shown in figure 2. These standards are:

TOTAL SCORE	CLASSIFICATION
115 to 178 inclusive.....	E (Excellent)
65 to 114 inclusive.....	G (Good)
35 to 64 inclusive.....	F (Fair)
0 to 34 inclusive.....	P (Poor)

It will be observed that such general standards fail to give any specific directions concerning their use in hiring. They do give, however a guide for interpreting the meaning of any particular score by providing a classification that is uniform and standard. Before such standards could be safely utilized by an employment department a further research step is necessary. That is, the relative turnover rates for "E," "G," "F," and "P" filing clerks in the given company should be determined. For example, suppose that the turnover figures show that the turnover rate for "E" and "G" file clerks is very low whereas the turnover rate for "F" and "P" file clerks is rather high. It is clear that the acceptance of applicants classified as "E" and "G" in the tests and the rejection of applicants classified as "F" and "P" would provide a stable group of filing clerks in that company so long (and only so long) as the wage rates, working conditions, cost of living, etc., for file clerks in that competitive area did not change materially. With each serious change in the important economic factors, adjustments would have to be made if the stability of the file clerk group was to be maintained. It might even be necessary to hire only "F" applicants should the company be unable to meet its competitors in any of these economic changes.

Let us take another example that may serve to make this point clear. Suppose the turnover figures revealed a high turnover rate for "E," "G," and "P" file clerks whereas the turnover rate for "F" file clerks was relatively low. If the "F" group of file clerks are able to do the work satisfactorily then only "F" clerks would be hired. If "F" clerks are not doing the work satisfactorily then it might be possible to remove whatever causes were operative in producing the high turnover rate among the "E" and "G" group. Higher wages might be the solution, better hours might turn the trick or some other factor might need adjustment. From these examples, it is clear that the actual hiring standards for any particular company must be determined for that company on the basis of adequate personnel research. The general standards for classifying the scores of file clerks are very useful in themselves. In actual practice they can be used intelligently only when systematic turnover research is conducted, hiring standards based on the results of such research established and the final judgment arrived at by a careful consideration of the properly interpreted test results plus all other supplementary information.

There are no doubt numerous companies that have adopted various employment tests without realizing the necessity for safeguarding their use by adequate personnel research. The writer knows of a case where a company installed a set of reliable clerical tests. The policy was laid down that, *of course*, they would hire only those applicants who made high scores in the tests. They thought this was the proper procedure because it was true that the best clerks made the highest scores. Imagine the surprise of these officials when a special study revealed the fact that the use of the tests had actually *increased* the turnover among their clerical workers. For the first time they realized that their employment policies were such as to *retain* only the mediocre clerks while the high grade clerks soon became restive and went elsewhere in search of better opportunities. So long as no changes occurred in this situation it is clear that the most economical policy would be the hiring of only those applicants who made average scores in the tests. It is entirely possible that this company would have found it more economical in the long run to continue its policy of hiring only high score applicants, at the same time doing everything possible to retain such workers by counteracting the factors that led to a high turnover rate.

The foregoing point of view stresses the importance of continuous personnel research as the only approach to an improved personnel service. Tests and test standards are easily sold to industry (as evidenced by the apparent success of certain test publishers in marketing employment tests) but it is unsafe and will continue to be an unsafe thing so long as those tests and test standards are used at their face value without engaging in the necessary research that would make those tests of real value in employment work. The personnel movement, if it is to be a real improvement over the traditional system which it displaces, must understand the necessity for the research point of view and the neces-

sity for sound methods of research. It must adopt both as a part of its daily working philosophy. With such a working philosophy, a series of file clerk tests or any other kind or type of test equally reliable may be used with profit in building up an efficient and stable group of workers.

Standardized Stenographic Tests

By Wm. H. Woodruff[1]

"DICTATE a letter" is the usual method of selecting a new stenographer. This is really an "occupational test" but was used as a matter of common practice years before that term was originated.

Without a doubt "dictate a letter" is ever so much better than a mere interview, in which the applicant's flat statement as to speed must needs be accepted. But "dictate a letter" is entirely unstandardized, with results as follows:

1. The letter, picked at random from desk, file, or imagination, may be either short or long, plain or technical, contain unusual words or phrases, etc.

2. The speed of dictation varies according to the temperament of the dictator, his mood at the time, whether in haste or at ease, and whether prejudiced for or against the applicant.

Feeling that a centralized agency, engaged from time to time in hiring stenographers, should standardize its testing methods, the letters in the Instruction Manual were worked out. Every effort was made (*a*) to avoid unusual words and phrases and (*b*) to present ordinary everyday discourse with which any one would be familiar. The length of the letters was set at 150 words, because this seems a happy medium, makes a nice single page setup without crowding, and is a good round number from which to figure speed.

Test letters should always reflect the business of the concern. This adds to the practicability of the test from the applicant's point of view. Failure to make use of terms and problems peculiar to the business is a great handicap to any occupational or general test. The applicant can see no reason for his being questioned on matters that have no bearing on the position, and often fails to coöperate.

There follows a partial list of the benefits to be gained by using such standardized stenographic tests.

1. Suitable material is always at hand whenever a stenographic test is necessary.

2. Any qualified interviewer can give the test, after reading through the instructions and getting acquainted with the ten-second dictation intervals.

3. All applicants are tested by the same method and under identical conditions.

4. Speed in taking dictation and in transcribing is established definitely and numerically.

[1] Assistant Personnel Director, Ingersoll-Rand Company, Phillipsburg, New Jersey; formerly Employment Supervisor, General Offices, Philadelphia Company, Pittsburgh, Pa.

5. After the system has been in use for some time the subsequent employment records of employees, thus tested when hired, may be compared with their test scores.

Note: If the first letter tried proves too fast or too slow, it is only necessary to shift to the next one. The results of only one letter should be recorded, to avoid confusion.

STENOGRAPHIC SPEED AND ACCURACY TESTS

INSTRUCTION MANUAL

Preparation. Make an estimate of the dictation speed *probably* possessed by applicant, judging from his application and his answers to questions. If the interviewer does not give the test, the examiner should consult the interviewer on this point.

Before proceeding further, explain to applicant that you are going to dictate a letter and that you want him to handle it in the same way that he would if it were his first letter in a new position. Be sure that he understands that it is a test but do not stress the point.

If the examiner is inexperienced, he should mentally run over the first interval in the body of the letter several times, until he hits upon the proper speed for covering each interval in ten seconds.

Dictation. Provide applicant with *two* well sharpened pencils, without erasers, and a regulation stenographic note book. Turn to the appropriate test and make sure that applicant is at his ease and ready to start. Dictate very *slowly* through the "Dear sir" of the salutation and have applicant read back to be sure he has it exactly right.

Then dictate the body of the letter, including the complimentary ending, at the rate of one interval per ten seconds. Tell applicant of punctuation marks by merely saying "Comma," "Period" or "Paragraph" when these occur.

Transcribing. Seat applicant comfortably before standard typewriter. Provide him with two sheets of 9 × 12 paper and one sheet of carbon paper. Wait until machine is adjusted and applicant is ready to start. Note the time involved (as, "1¾ minutes") in transcribing, not counting that spent in the salutation through "Dear sir."

Calculation. Read the finished letter carefully, checking (✓) each mistake including spelling, position and punctuation. Enter the total number of words on the original, below the letter. Multiply the number of errors by five (5) and substract this number from the total number of words (150). Divide the resulting figure by the number of minutes, including the fraction, if any. Note: A "wrong" word counts as only one error.

Write name of applicant, and date, at top of original sheet. Destroy carbon copy, after noting evenness of touch.

Application card: Enter results on application card as in following example:

"Dictated — 90 words.
Transcribed— 37 words.
Setup — Fair
Date — 1/10/23 W. H. W."

The rating on "Set-up" should be "good," "fair" or "poor," according to the arrangement and appearances of the finished letter, including carbon copy.

The letters that follow the date notation are the initials of the examiner.

TYPING TESTS

While these tests are designed for stenographers, they can readily be used for measuring typing ability. Have applicant type any one of the test letters on a standard typewriter, noting the time involved beyond the salutation and "Dear sir." It will be of advantage if copies of the letters are prepared for use in typing tests, omitting the interval division marks, which would tend to confuse the applicant.

Calculate the speed in the same manner as for the transcribing part of a stenographic test. Enter results on application blank in same way also, merely omitting the "dictated" item and substituting "typing (copy)" for the word "transcribed."

120 words per minute
(20 words per 10 seconds)
Regular intervals
(150 words)

Mr. A. C. Brown,
1200 Harrison Ave.,
Denver, Colo.
Dear Sir:

Your letter of recent date has been received and we are sorry to note that the compressor that we shipped * you several months ago is not working properly.

We assume that you have been careful to follow our instructions in* operating the machine. In most cases this will insure perfect operation for the first six months.

As it happens, Mr.* Green, who represents us in the West, will be in your city early next week and we are asking him* to call at your plant and go over the compressor for you. Mr. Green was in the manufacturing end before* he went on the road and is thoroughly competent to tear down and rebuild, if necessary.

We will be pleased* to replace any worn or damaged parts, and will do so free of charge if there is no evidence that* the machine has been subjected to abuse.

Very truly yours,

105 words per minute
(17–18 words per 10 seconds)
Irregular intervals
(150 words)

Mr. A. C. Brown,
1050 Harrison Ave.,
Denver, Colo.
Dear Sir:

It is evident that our letters crossed in the mails, as we wrote you early last week* about the pumps and your letter arrived this morning.

All means within our power are being used to* push your order through, but the people from whom we secure the engines have been slower than* usual in meeting our needs. We have now obtained their final and absolute promise to deliver at least* one of the engines this week, and we will then see that connections are made and preparations* for shipment started.

If the promise that we are relying upon is lived up to we will deliver* one or both of the pumps to you by the end of next week or sooner.

This* delay must be very annoying to you but we want you to know that we are doing everything* that we can to lessen the inconvenence.

Yours very truly,

90 words per minute
(15 words per 10 seconds)
Regular intervals
(150 words)

Mr. A. C. Brown,
900 Harrison Ave.,
Denver, Colo.
Dear Sir:

When we sent you a copy of our general Mining Machinery Catalog last year, we* hoped that we might have the pleasure of supplying some portion of your new equipment,* but our records do not show that we have received an order.

We are selling* compressors, pumps, and similar machinery to the mining trade throughout the West, especially in your* section and vicinity, where a great many mining companies buy our goods exclusively.

We should* like to fill a share of your orders. If you wish to have us quote* our price list, please make up your memorandum and we will give you our very* best figures by return mail. We hope you will give this subject favorable consideration when* ready to make replacements.

If you can use other machinery in our line, and will* give us specifications for same, we will quote you very attractive prices.

Very truly yours,*

75 words per minute
(12–13 words per 10 seconds)
Regular intervals
(150 words)

Mr. A. C. Brown,
750 Harrison Ave.,
Denver, Colo.
Dear Sir:

We regret very much that the special horizontal drill reached you in* such poor condition. It was shipped in good order, after being very thoroughly* inspected. We have the railroad company's full statement on this point.

It* is impossible for us to make good your loss. We always ship at* highest rates and the transportation company assumes the responsibility when we get* their receipt. You should have no difficulty in securing reimbursement from the railroad* company, if you declined to accept the drill on account of its* condition, and you should lose no time in pressing your claim.

We are* glad to note that the balance of your shipment, including the pumps* and compressors, came through in good order and that you are well satisfied* with them.

Our bill for the entire consignment is enclosed and we* trust that you will remit at your very earliest convenience.

Yours very truly,*

60 words per minute
(10 words per 10 seconds)
Regular intervals
(150 words)

Mr. A. C. Brown,
600 Harrison Ave.,
Denver, Colorado.
Dear Sir:

Your favor of recent date is at hand, and in* accordance with your suggestion we sent you by express a* sample of the metal to show the temper. We likewise* send you a sketch of the new cylinder that is* used, to illustrate its many advantages.

It seems to us* that this design is a great improvement over the cylinders* now in use and we feel that it will suit* your purpose exactly.

In regard to the use and care* of the machinery we have long followed the practise of* attaching to each shipment a sealed envelope, containing full details* as to the mechanics of construction, erection, and operation. However,* if you wish it, we will gladly mail this information* to you before you place your order.

We will await* your reply with interest and assure you of further accommodation* as to information and samples upon request.

Very truly yours,*

News Notes

THE AMERICAN MANAGEMENT ASSOCIATION

At a luncheon of more than 150 executives of 100 industrial concerns, held in New York City on March 14th, it was voted to change the name of the National Personnel Association to The American Management Association. The statement from the Board of Directors of the Association, outlining the relationship of personnel work to management, and suggesting a change in the name of the Association, was in part as follows:

"It is a matter of common observation that new methods and policies even new movements, must grow and develop for a while apart, before they can be accurately classified and fitted into their proper places in the conduct of business and the operation of industry. Probably the greatest recent example of this seemingly basic truth is the rise and growth of personnel work and of the societies and associations devoted to personnel activities.

"From this gradual change in point of view and classification has emerged the belief, that the responsibility for personnel work rests with the management. Since, 'Management is the art of getting things done,' the responsibility for *doing* in business rests upon the line organization, and its individuals are in the closest contact with persons, or the human agencies, of commerce and industry. Therefore, the line organization must deal directly and at first hand with personnel work, and cannot divest itself of its responsibility in this connection merely by employing a staff personnel man in an advisory capacity.

"Personnel work is an integral, inseparable part of management interwoven into all of the efforts and activities of the production and sales departments and of the office. It cannot be segregated as an isolated function and all efforts to bring about such a separation are foredoomed to failure.

"We readily recognize that from 80 to 90 per cent of office management is a human problem and that from 70 to 85 per cent of sales management is a problem of handling the sales force. The job of the works manager is to a considerable extent a problem in selecting, developing and guiding assistants down to and including the foreman. The efficient foreman of today is a teacher and a diplomat and not merely a graduate operater. Half of the job of the president and general manager is a problem in selecting, developing and organizing executives and in coördinating their activities. The day when American management can afford to treat the human factor as 'taken for granted' has gone by, and today, emphasis must be laid on the human factor in commerce and industry and we must apply to it the same careful study that has been given during the last few decades to materials and machinery.

"The obvious conclusion from this development and trend of progress, in so far as it applies to a society or association dealing primarily with personnel administration, is that such voluntary organization should select as its title a name broadly descriptive of the movement and of the field to be served. Applying this thought specifically to our own society, it seems that the time has now come to broaden our title to include management in commerce and industry, with an explanatory limitation that its activities shall be non-engineering, that is, confined to the consideration of the human factor in commerce and industry.

Two themes presented at the meeting were "The Human Side of Production Management" and "Correlation of Sales and Production."

SUMMER COURSES IN PERSONNEL ADMINISTRATION AND ALLIED SUBJECTS

Students of personnel administration will find the following courses offered to them in New York during the coming summer. They are given by Columbia University, New York University, Bureau of Personnel Administration and the New School for Social Research.

The courses at Columbia include two by Mr. George Filipetti and one by Professor A. T. Poffenberger, July 9 to August 17. The courses by Mr. Filipetti are described as follows in the catalogue of the summer session:

"*Elements of business administration.* A survey of the problems of business administration. The course is introduced by an analysis of the characteristic features of the modern economic structure in which business operates. Consideration is then given to the influences that determine plant location, and this is followed by a study of the various types of ownership organizations, including the individual proprietorship, partnership, joint stock company and corporation. The administration of personnel, including the selection and placement of labor, methods of payment, employer-employee relationships, and the organization and administration of the personnel department, is followed by a consideration of production control and purchasing."

"*Employment management.* Covers such subjects as the labor supply; selection and placement of labor; unemployment; labor problems in seasonal industries; health and accidents; welfare work; labor legislation; wages; collective bargaining and the various forms of labor organizations; labor turnover; personnel department organization and operation.

"The aim of this couse is to analyze the place of labor in modern economic life and to interpret the present and possible relationships of management and men."

The course by Professor A. T. Poffenberger is listed as follows:

"*Vocational and industrial psychology.* Psychological methods and principles applied to the problems of human engineering in such fields as vocational guidance, the selection of employees, management and organization of personnel, industrial time and motion study, job analysis, trade-testing, and the personal and environmental conditions of effective and satisfying work. Illustrated by concrete demonstrations and the result of current studies in the field."

There is no course at New York University dealing primarily with personnel work although the following may be of interest: a course by Mr. MacDonald on Principles of Business Administration, a course by Mr. Fowler on Problems of Labor and Employment, and a course by Mr. Hoopingarner on Psychology of Business. These are given during the summer session—July 2 to August 10.

The Bureau of Personnel Administration offers a course under the direction of Dr. Henry C. Metcalf, Director of the Bureau. It is an eight weeks' intensive course—July 5 to August 30, 1923—in personnel administration and the following topics are taken up for consideration: employment methods, health and safety, training of executives and employees, labor statistics, wages and incentives, plant organization and management, and the administration of joint relations. Standard practice is analyzed and visits are made to progressive plants. The Bureau is located at 17 West 47 Street, New York City.

Two courses are to be given at the New School for Social Research 465–469 West 23rd Street, New York City, June 25 to September 15, which will doubtless be of interest to students of personnel. One is a course by Mr. Leo Wolman on Unemployment Insurance and the other a course on Industrial Relations by Mr. Leiserson.

THE EYESIGHT CONSERVATION COUNCIL OF AMERICA

According to a recent issue of "Science," L. W. Wallace, executive secretary of the Federated American Engineering Societies, has been reëlected president of the Eyesight Conservation Council of America, which with the coöperation of engineers and educational authorities is carrying on a campaign to eliminate economic and physical

losses due to poor eyesight in the schools and factories. Defective vision as a source of industrial waste was revealed by the Hoover committee on elimination of waste in industry, of which Mr. Wallace was vice-chairman. The section on conservation of vision was one of the notable features of the waste report.

Additional surveys in factories and in schools have multiplied the evidence, it is stated, that 25,000,000 gainfully employed Americans are thus afflicted. Associated with Mr. Wallace as members of the Board of Directors and of the Board of Councillors of the Eyesight Conservation Council, according to the announcement of the election of officers for the coming year, are several prominent engineers.

Professor F. C. Caldwell, of the Department of Electrical Engineers, Ohio State University, who with Secretary of Labor James J. Davis is a recent addition to the governing bodies of the Eyesight Conservation Council, is engaged in important studies in illumination bearing upon the question of eye conservation. Engineering methods will be employed by the council in surveys which are to be conducted in schools and workshops.

Officially associated with these engineers in the movement are prominent educators.

Individual industries, as a result of the publication of the waste report, are adopting eye conservation methods to promote efficiency among the workers.

UNEMPLOYMENT PREVENTION BILL

The following note is a digest of the Huber Unemployment Prevention Bill of Wisconsin, prepared by Professor A. B. Forsberg of Carroll College, Waukesha, Wisconsin. At the time of going to press the Bill had been favorably reported out of Committee in the Senate and was still in Committee in the House. A similar bill has been introduced in Minnesota.

America has more unemployment than any country in the world. Unemployment is a most damaging social menace. Still is has been long recognized as a preventable evil. Many employers have successfully prevented unemployment by improving their business methods. The Wisconsin Unemployment Prevention Bill is based on their example, and it creates an inducement to all industry to likewise improve their methods so that unemployment will be reduced to a minimum.

Wisconsin has already experienced eleven years of prevention in the field of industrial accidents. For years management admitted that it could prevent accidents, but did little to prevent accidents, until the law of 1912 created the incentive for prevention.

As a result, from 75 to 90 per cent of the accidents have been prevented. Legislation placed the responsibility where it belonged. It made it costly for industry to neglect the accident prevention problem. It became profitable to prevent accidents.

The unemployment bill is patterned after the 1912 accident law. It makes it profitable for all employers to arrange their business so that avoidable "layoffs" would be prevented. It likewise creates the incentive long need for constructive prevention of unemployment.

MAIN FEATURES OF THE BILL

Scope of Act and Exemptions: Includes all employes in the employ of those who employ 6 or more persons. *Exempts* farmers, state, city, towns, school districts, all private employers of less than 6 persons, and all non-manual employees whose income is over $1500.00

Rate of Compensation Payments: Beginning with the fourth day of involuntary unemployment, $1.00 for each work day for males and females over the permit age and 50 cents for those of the permit age is paid qualified persons.

Wisconsin Employers' Mutual Employment Insurance Co: The bill requires that employers organize a state-wide mutual insurance company. Its primary purpose shall be to prevent unemployment. This mutual is managed by directors elected solely by employers. The state may not interfere any more than in regulative capacity that is now exercised over all insurance companies.

This mutual will organize an efficient business service to assist its member employers in the following capacities:

1. It will make extended studies into the causes of business irregularities, depressions and unemployment, and will recommend constructive preventive measures.

2. It will help each individual employer solve his own problems of unemployment and of business instability.

3. It will organize employment of the seasonal industries so that the workers will lose less time between seasonal jobs.

4. It will encourage moderate and gradual expansion and discourage unwholesome expansion and booms that lead to unemployment and crisis.

5. Each member is given an incentive to coöperate in preventing unemployment. The incentive lies in the membership or premium fees that each employer is required to pay into a reserve fund managed by the Mutual. The amount of each employer's quota varies with his employment experience for the period. Those who "lay-off" the most pay higher rates. Those who offer steady employment pay less. Thus the incentive acts as a continuous spur to better management and to regulate employment. The periodic premium charges are paid during times of prosperity. It is then that the seeds of business depression are sown. When industry is unable to offer employment to those willing to work, compensation will be paid to the unemployed from the reserve fund.

The Industrial Commission may exempt certain employers who do not desire membership in this mutual, upon evidence of financial ability.

Seasonal Industries: All industries shall be classified as to the length of the usual employment period. Seasonal industries will pay premium rates only proportionate to the length of their season.

Requirements for Compensation Payments: Industry shall compensate each working man temporarily unemployed provided:

1. He has worked six months in the state, and

2. He is capable and available but unable to obtain suitable employment.

He is not required to work where there is a strike or lockout, or where the conditions or wages rank below those prevailing in the employment offered.

3. But compensation shall not be paid in excess of one week of compensation for every 4 weeks the unemployed worker has been employed in the state. Not more than 13 weeks of compensation shall be paid in a calendar year.

4. Compensation shall not be paid when unemployment is caused by:

a. Voluntarily quitting work.

b. Discharge for misconduct.

c. Strike or lockout.

d. Confinement as inmate in state institutions, etc.

Claims and Procedures: The unemployed worker *applies for work* at a designated local office. His claim for compensation is then also considered; whereupon, an order may be issued for compensation due him weekly. If the claim is not contested the compensation is paid from the funds of the Employers' Mutual Insurance Company.

Contested Cases: Where the claim is disputed, it shall be reconsidered by the Industrial Commission and a still further appeal is provided to the Circuit Court, the court action to be defended by the Industrial Commission. This procedure is similar to that of the Workmens' Compensation Act.

Cost of Administration: Not one dollar of expenses is to be added to the tax burden of the state. The farmer, consumer and labor can not prevent unemployment. It is long admitted a problem of organization, of management and of finance. Therefore from each dollar of premium paid to the Mutual Company, 10 cents is set aside to pay all expenses incurred by the state in administering the act.

Unemployment Advisory Board: To facilitate harmonious administration of the act, a State Advisory Board, consisting of an equal number of members to represent both employer and employees is to be selected by the Industrial Commission from lists submitted by both parties for that purpose. The Board shall serve without pay, and shall make recommendation that will aid in general administration of the Act.

Commenting on the above Bill, Henry S. Dennison, President of the Dennison Manufacturing Company, Framingham, Massachusetts, says:

"I am definitely convinced that a bill of this sort will act as a constant spur upon the management to make steady progress in correcting the conditions of irregular employment.

"It is an investment for the employers of Wisconsin. Though it costs money at first, it is as fine a bit of investment as employers can make. It will be besides that an inspiration to improve methods of management. We have to improve our technique and spirit of management for the good of all."

DIRECTORY OF PERSONNEL DEPARTMENTS IN PENNSYLVANIA

In the February issue of "Labor and Industry," the monthly bulletin of the Department of Labor and Industry of Pennsylvania, appears a questionnaire on personnel work, drawn up by the Women's Council, to be sent out to the management of industrial plants. On receiving this publication the management is asked to give careful attention to this questionnaire, and, if it meets with approval, to answer the questions and return to the secretary of the Industrial Board. The intention is to compile a directory of personnel departments in this state which will be available to employers as well as to the Department of Labor and Industry.

Those industrial plants within reach of the bulletin therefore are asked to coöperate in making it a success. Upon the harvest of replies will depend the merit of the proposition. In that case, it will be extended further throughout the state by means of the new industrial directory soon to be issued by the Department of Internal Affairs. In other words, this is an experiment in which all employers are taking an active part. The very least that the Industrial Board expects is that the plants with high standards already in force will come out and assert themselves.

THE DEMOCRATIC EDITOR AND THE COBBLER IN REVOLT

"In a delightful little town in the Middle West there is a university of worthy reputation. The alumni association of this university publishes weekly a journal of university news. For the editing of this journal the association employs a graduate of a few years ago whose culture, whose interest in life, whose judgments as to the relative importance of things and, above all, whose intellectual democracy may or may not be represenative fruits of this democratic institution.

"The state that supports this university supports, also, a psychopathic hospital which in many respects, is a model of its kind. The director of the hospital is an eminent psychiatrist of more than national reputation. The hospital is a part of the university; the director is a member of the university faculty.

"M. Coué has reached our shore. The intellectuals are agog. The deluge of praise and discussion that set awash the metropolitan dailies has trickled into this little town of the Middle West, and about the dinner tables this marvelous man and his great discovery are matters of much concern. Now, suggestion and auto-suggestion and their relation to life are quite fundamental things. But, until the little pharmacist from Nancy arrived, these students had never heard of auto-suggestion although they had heard of many other things.

"Their interest is piqued, amused, skeptical, but, no doubt, with a secret gathering to themselves of bits gleaned, they read the jumbled truths, half-truths and no-truths of the publicity agents and the "advance managers." There is a man on the campus who in a brief hour or in a short article could give information on this subject—what auto-suggestion is, what part it plays in the lives of individuals, how it may be used to advantage, the limits of its usefulness and its pitfalls of self-deception, the relation of auto-suggestion to other mental processes, and the unconscious part these play in the determination of conduct and the formation of character. The editor of the journal with a true spirit of democracy in intellectual matters, consults the librarian of the university, who happened to cross in the same boat with M. Coué, and sends out word to the alumni anxiously waiting the

latest bit from the university that the Librarian thinks well of M. Coué. And, his democratic spirit overflowing, he informs them likewise on the same page that the Professor of Sociology does not approve of "intelligence tests." The opinions of the Professor of Psychology, the Professor of Psychiatry, and the Professor of Education, he is reserving, we take it, until the question arises locally as to the relative merits of concrete and asphalt as road material. But what we should particularly like to know is the view of the Professor of Biology as to whether the cables of Brooklyn Bridge have weakened and if the bridge is safe."—*March issue of Mental Hygiene Bulletin.*

WORKERS' EDUCATION

That education is no new hobby of American workers and that its further promotion is being continued by labor organizations is brought out by an article in "The Locomotive Engineers Journal" for March, 1923.

Now 19 states and the District of Columbia boast of their workers' classes.

The work of the Bryn Mawr Summer School for women in Industry and that of the Brookwood Labor College is described.

In another article in the same publication, Spencer Miller, Jr., Secretary of the Workers' Education Bureau of America discusses the Trend of Workers' Education in the United States.

Educational Principals for Labor are set forth by R. P. Farley who has spent a lifetime in close contact with public education both in England and America, and Higher Education of Working Men and Women is the subject of an article by Albert Mansbridge, one of the founders of the workers' education movement.

Toscan Bennett, Executive Secretary of Brooklyn Workers' College tells of the work of that institution in discussing the first resident workers' college in the United States.

How Belgian Workers Educate Themselves is presented by Henri De Man, Former Principal of Belgian Labor College and Secretary of Belgian Board of Labor Education.

Under the title The Workers' Five-Foot Bookshelf, Educational Directors in the Amalgamated Clothing Workers of America give suggestions as to worth-while reading material for workers.

Basil M. Manly reports the trend of railroad presidents' salaries upward while they were calling for cuts in wages.

Thorton W. Merriman relates how and why German labor is determined to defend the Republic and oppose a restoration of monarchy at all costs. The spectacular demonstrations by the workers of Germany following the murder of Walter Rathenau, German Minister of Foreign Affairs, last summer, are considered a startling revelation of the power of organized labor.

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An interesting experiment in labor education in America is being tried out by the Workers' College of Minneapolis. E. H. Holman, Secretary of that institution, emphasizes the importance of mass psychology in the control of society.

REPORT OF BUSINESS CYCLES COMMITTEE

In a recent issue of the "American Labor Legislation Review" it is reported that the report of the Business Cycles Committee which was an outgrowth of the President's Unemployment Conference of 1921, has been proofed and should soon be ready for use. This 500 page volume contains suggestions, and recommendations made by members of the committee appointed by Hoover for the prevention of similar emergencies (to that of 1921) in the future. The facts on which these recommendations and plans are based were collected by the National Bureau of Economic Research but the responsibility for the recommendations is borne entirely by the committee on Business Cycles consisting of Mr. Owen D. Young, Chairman, Mr. Joseph H. Defrees, Miss Mary Van Kleeck, Mr. Matthew Woll and Mr. Clarence N. Wooley. Subject matter of the report is indicated by the following chapter topics: index of employment, studies in under-employment, effects of unemployment on the worker, effects of the depression of 1921 upon employment, methods of stabilizing production which

have been tried out in practice by far sighted business men, cancellations, construction work for steadying the business mechanism, financial devices for mitigating the severity of business cycles, public employment offices, trade union out-of-work benefits, unemployment insurance, plan for improving statistics of unemployment, methods followed by agencies which now attempt to forecast business conditions and a survey of the extent to which all these devices discussed in earlier chapters are now used.

CANAL-BOAT CHILDREN

Children living on canal boats form the subject of a survey recently completed by the Children's Bureau of the United States Department of Labor. While the number of these children is said not to be large, the conditions under which they are living are declared to present unusually serious problems. The report of the survey appearing in the latest issue of the Monthly Labor Review and also made public by the Children's Bureau in the form of an illustrated leaflet entitled "Canal-Boat Children," states that the canals surveyed represented both the old systems on which barges are drawn by mules, and the new systems on which steam has been substituted for animal power. Altogether, 354 children were found living on canal boats during the year of the study. On all canals the fact that the nature of the work necessitates long periods away from home on shore is an impelling motive to boatmen to take their families with them, although some recently formed transportation companies are forbidding the presence of women and children on the boats.

Many families found it difficult to get a doctor in a case of sickness or accident. A number of children had been born on the boats or at lock houses or other chance stopping-places, where the mother had neither friends nor home conveniences. Fresh milk was difficult to secure and most families used it very irregularly. In many cases, especially on the boats of the older canals, sleeping accommodations were entirely inadequate. The lack of social life and the long hours of travel rendered opportunities for recreation very meager.

The principal difference between life on the old and on the new canals, so far as the children are concerned, is said to lie in the fact that on the former child labor is profitable while on the latter there is little place for it. On the older canals most of the children worked for long hours driving mules and assisting with other parts of the work. On the new canals very few children were employed at boat work. However, in both cases the children's schooling is interfered with. The boating season on the canals studied ranged from seven to nine months in length, and from half to three-fourths of the children whose school records were secured were below the normal school grades for their ages.

MOTHER'S EMPLOYMENT AND INFANT MORTALITY

New evidence bearing upon the question of the influence of the industrial employment of mothers upon infant mortality will be made available in a report entitled "Infant Mortality: Results of a Field Study in Baltimore, Md., Based on Births in One Year" soon to be issued by the Department of Labor through the Children's Bureau. The material relates to births in Baltimore in one year and includes in regard to each infant information as to mother's employment, nationality, economic status, type of infant feeding, and other details that might throw light upon the infant mortality rate.

The evidence indicates that the mother's employment away from home either during the months immediately preceding the confinement or during the infant's first year of life is detrimental to the infant's health. The employment of the mother during pregnancy was found to be associated with a markedly high stillbirth rate, a high rate of premature births, a high mortality rate during the first month of life, and a high mortality from causes peculiar to early infancy—causes which are directly related to the health of the mother before birth. The stillbirth rate among births to mothers who were gainfully employed in industrial

pursuits during the year preceding the birth was over twice as high as the rate among births to mothers who were not so employed during that period. Of the births to these mothers 6.7 per cent were stillbirths, as compared with only 3 per cent of the births to mothers not employed. Of the live births to mothers employed away from home 6.2 per cent were premature, as compared with 5.7 per cent of those to mothers not so employed. The mortality rate during the first month of life was 77.3 per 1000 among the babies of mothers employed away from home, or nearly twice the rate, 39.9, among the babies of mothers who were not so employed; and the mortality rate from causes peculiar to early infancy among babies of mothers employed away from home was 57, as compared with a rate of 37.2 among babies of mothers not so employed.

The common belief that the employment of the mother is especially harmful if continued until a short time prior to the confinement is confirmed by this new evidence. Among the births to mothers employed away from home in industrial occupations the excess mortality from stillbirth and from causes peculiar to early infancy was greater in the cases of mothers whose work continued until just previous to the confinement. It is of interest in this connection that nearly 40 per cent of the mothers who were employed away from home worked until within two months, and 25 per cent till within two weeks, of the confinement period.

The employment of the mother too soon after confinement also appears to be a factor in the infant mortality rate. The mortality rate among the babies included in this study whose mothers were employed away from home during the babies' first year of life was found to be one and one-half times the rate among babies of mothers not so employed. In determining this figure allowance has been made for the fact that the mothers who are employed are largely of nationality and income groups in which the mortality rates from other causes than the the mother's employment are high.

Breast feeding is a principle element of care denied the baby whose mother works away from home. A much larger proportion of the infants of mothers employed away from home were artificially fed than of those whose mothers did not work. That this artificial feeding has serious consequence is apparent from the fact that the mortality among artificially fed babies average between three and four times that among breast-fed babies.

That the low earnings of the father bear the principal responsibility for the employment of the mother is shown by the marked contrast between the several income groups in respect to the proportion of mothers employed. Of the mothers in families in which the fathers earned less than $450, 29.2 per cent were gainfully employed away from home during pregnancy, while only 1.2 per cent of the mothers in families in which the fathers' earnings were $1250 or over were so employed at that period. The contrast is equally striking in the case of employment following the birth. Of the mothers in homes in which the fathers' earnings were less than $450, 22.1 per cent were gainfully employed away from home during the infant's first year of life, as compared with only 0.6 per cent of the mothers in homes in which the fathers' earnings were $1250 or over. The greater prevalence of mother's employment in the low income groups is evidently a factor in the high infant mortality rate which characterizes families with low incomes.

Previous reports of the Children's Bureau on infant mortality have shown a definite connection between income and infant mortality. As the income increases, the infant death rate decreases. This Baltimore study, based on a larger group than the previous studies, permits a closer analysis of the single of employment of mothers. The importance of this factor may be realized from the fact that even within the same income groups the mortality rate is higher for babies whose mothers are employed outside the home.

SUMMER SCHOOL OF OCCUPATIONAL RESEARCH

From June 25 to August 4, 1923, the Mount Washington School of Occupational Research will be in session at the Glen

House, Gorham, New Hampshire. This school is for the benefit of school counselors, placement officers, occupational surveyors and part-time teachers, and offers the following courses:

1. Organization and Method of Industrial Visiting. Objectives in guidance, placement and instruction; general classifications in industry; types of service or "departments" in an establishment; departmental occupations; a program for continuous occupational survey and analysis; drafting forms for the study of occupational opportunity and wages; schedules for job analysis and qualifications; a workroom inspection schedule; technique of the industrial visit; the report or write-up of the visit.

2. Occupational Information and Statistics. Federal Census data for junior and juvenile workers for any city and state; practice in tabulation of data from opportunity and wage schedules showing organization of departments and grading of jobs; practice in tabulation of health, safety and welfare conditions by establishments; practice in writing up job analyses and qualifications.

3. Occupational Analysis. The scope of job analysis and of occupational analysis; inadequacies of the general "vocational survey"; a study of current products in analysis; an evaluation of "character analysis" for junior placement and guidance; the character of junior and juvenile jobs; skill and supervision as a "career" in industry; occupational analysis for instructional purposes; the instruction process; job analysis by the part-time pupil; determining the educational content of the job; problems of human relations and character in industry.

The school is to be officered by May Rogers Lane, A.M., as Director and Margaret Hutton Abels, A.M., Associate Director, both of whom have had a wide experience in the field. Communications should be addressed to Miss May Rogers Lane, The White-Williams Foundation, Grant Building, 17th and Pine Streets, Philadelphia, Pa.

Book Reviews

THE MAKING OF AN EXECUTIVE

By A. Hamilton Church, pp. 457 + xvi. D. Appleton and Company, New York, 1923

REVIEWED BY H. G. KENAGY

When the reviewer picks up "The Making of an Executive," in the hope of discovering a real approach to this all-important problem, and discover that the book is about something else entirely, he is tempted to vent his disappointment and warn possible readers not to waste their time. But titles are invented to help sell books, not necessarily to denote their contents. Under the circumstances perhaps we ought to disregard the title and appraise the contents for what they are worth.

This is not to say the author does not seriously believe that he is writing about how an executive is made. His point of view seems to be that the development of executive ability consists solely in the acquisition of knowledge about the various elements of business organization and operation. He is not alone in this. Dean Joseph French Johnson of New York University, School of Commerce, Accounts and Finance, urges, in the March 31st issue of *Forbes*, that success in modern business depends primarily upon *organized knowledge*. The executive must have a trained, well-developed brain. The training and development cannot be gained by experience, but by reading and study of economic laws, the psychology of human behavior and the other fields of knowledge which enter into the science of business.

There is no denying that organized knowledge is extremely important for the executive. Furthermore he needs, as the author states, a scientific point of view. But these things cannot make an executive. Some of our college professors of business administration are much more thoroughly equipped with knowledge and perspective than most successful business men, yet they might easily fail to become notable executives. On the other hand, scores of our famous business leaders are lacking in organized knowledge (and conspicuously few could be said to have the scientific point of view), but they are indisputably successful executives! A book which purports to describe how an executive is made, should not as does this one, limit itself to a discussion of the fields of knowledge with which an executive should be familiar.

The author recognizes, in his opening chapter, that personal qualifications are important for success as an executive. He names health, responsiveness of mind, self-control, will-power, precision of mind, courtesy, dignity, firmness, and freedom from worry, as essential qualifications. "Some of these," he says, "are inborn; others can be strengthened and perhaps developed, when absent, by suitable training and effort" (p. 8).

But in another place (Paragraph 3, p. 2) he states: "It is not, of course, possible to teach executive ability, since the aspirant must bring moral and physical qualifications of his own to the task, beyond the power of others to provide if he does not possess them." There seems to be a clear contradiction here, and the author's real leaning seems to be away from the possibilities of any worthwhile training in *abilities*.

The trouble evidently is that training is outside the author's scope of knowledge, for be dismisses the matter by saying: "after all, very little is known about such matters" (p. 8) and "practical psychology has not yet advanced to the point where it can be trusted as a guide to self-development" (p. 9).

It is with this uninformed attitude as well as with the emphasis upon the acquisition of knowledge, that we must take issue. Executive qualities can be greatly developed by systematic training, under proper guidance, and the development of these qualities is much more important than the mere mastery of facts about the various fields of business. Space forbids discussion of this point, but extensive experimentation has established the fact that by taking one quality at a time and assigning an individual definite tasks requiring the exercise of that quality or trait, the individual can be measurably developed. If the president of a company will take the trouble to analyze his minor executives, determine which qualities each lacks, and set a series of tasks for each, he can greatly develop the executive ability of his staff.

But the author has given attention in this volume to an entirely different problem. He has been concerned with organizing the fields of knowledge with which an executive should be familiar. Therefore he has given us a rather complete outline of the organization and operation of a business. However it is entirely too much to say that he has included in the book all the information which the executive needs. Rather, he has discussed the fundamentals and stated certain guiding principles. But he descends at times to a very detailed discussion of some particular phase of routine or operation. For example, in chapter IV he goes into minute detail about the use of skids in handling material in the factory, giving illustrations (pp. 175–179). In the same chapter, he gives thirty-three pages to the organization and routine of store-keeping. In contrast to this, he gives only fifteen pages to purchasing problems and much of this is concerned with the inside routine of record keeping and control. Actual executive problems are given relatively slight emphasis. For example the relations of the executive to the factory are given only two pages (235–236), and executive control of purchasing and store-keeping are covered in less than six pages.

It is plainly evident that the author has given major attention to those phases of management with which he is most familiar, but his treatment of the other phases,while general, shows acquaintance with the most advanced ideas and technique. His discussion of personnel problems amounts to only a short summary (pp. 294 ff) but he emphasizes the importance of job analysis and scientific standards. On the whole, while the book covers no subject thoroughly enough to give an executive all the information he needs, it should serve a useful purpose in indicating the fields of knowledge which are important and in setting forth the ideals and principles involved in successful executive work. Students of business administration should find the book of great value in giving them a broad survey of the requirements of modern business organization and operation. Ambitious clerks and young minor executives will find in it a valuable outline of the fields of knowledge which they must master if they wish to reach executive positions. Line officers in large concerns who find themselves immersed in the routine of their specialized operations are probably most in need of the facts and ideas which it can impart. But in each case, the individual must go from this book to a specialized treatise in each of the fields of knowledge he wishes to master.

AN INTRODUCTION TO THE PSYCHOLOGICAL PROBLEMS OF INDUSTRY

By Frank Watts, M.A. New York, Macmillan Company, 1921. Pp. 240

REVIEWED BY MAX SCHOEN

Professor Watts devotes this well written and suggestive volume to the presentation of the results of recent studies bearing on the physiological psychological problems, particularly the latter, that confront industrial leaders whether in the rank of labor or in that of capital. At the very outset of his presentation the author sounds a timely warning, namely, that the psychologist does not claim to be able successfully to attack industrial problems without special training but, "he ought to be able in his own way to supplement on the human side what has been so extraordinarily well done on the material side to increase the efficiency of our industrial system." The author might have added to this the deplorable fact that thus far even psychology seems to be mainly interested in the material aspect of industry, how to make out of the human being a more efficient machine for the grinding out of more goods, rather than in its humane aspect, how to make out of the worker a better human being, a worker happy and contented in his work. The literature on the human problem in industry is very meagre not only in quantity but also in quality, consisting mainly of sentimental anecdotes which the narrator usually dignifies with the name of "human nature" or "instinct" in industry. To slight the importance of such problems as industrial fatigue and inefficiency, the eliminating of fatigue from work by motion study, scientific management and labor, to each of which Professor Watts devotes a chapter, would indeed be intellectual blindness. These are, however, only means towards an end, and therefore of secondary importance in comparison with those problems that bear directly upon individual and social welfare, such as vocational guidance, industrial unrest, creative impulse in industry, to which fortunately more than one-half of the material in this book is devoted, and with which this review is mainly concerned.

The opening chapter the author devotes to a discussion of the psychological point of view in industry. Psychology is defined, and adequately so, for the author's purpose, "as the science which deals with the behavior of man, considered not only as a human being but also as an organism, and not only as a human being and as an organism, but also as the mechanism of his self expression. Moreover, psychology will deal with the group-life of men and the conditions of its existence and unity. The various schemes for the organization of industry as a group-adventure must, therefore, call for psychological study." Professor Watts is to be commended highly for his clear cut statement as to the standpoint that a psychologist takes in applying his principles to industrial problems. "It should be stated clearly at once that the industrial psychologist, though concerned with the discovery among other things of the best possible conditions for securing the efficiency of the worker, and though as an ordinary man among men bound to attach values to what he sees about him, is not concerned as a psychologist with the rightness or wrongness of the purpose for which modern industry is undertaken, that is, with any ethical problem as such. It is not his business as a scientist to take sides either with the employer against the workman, or with the workman against the employer. But bad workmen, bad employers, and bad methods will interest him as much as good workmen, good employers, and good methods. In considering the relation to human efficiency of monotony and variety of occupation, of the speed and noise of machinery, of piecework, daywork and overtime, of fatigue and rest, or irritation or good-will, and of the other manifold factors affecting

the worker which demand his attention, his aim, then, must be scientific: to collect the facts, to arrange them, and to attempt to explain them. So that the antagonisms of employers and workers will provide him not with the subject for a sermon, but with data for the construction of his conclusions about human nature as it functions at present in industry or may be expected to function in improved conditions. If his conclusions are sometimes put to base uses it is not his fault. To attack the psychologist, therefore, because some of the results of his researches may be ignobly exploited in the service of mean ends and to the great disadvantage of the workers or the community, or both, is as stupid as to advocate the abolition of the physical sciences because they were so universally employed during the recent war in furthering the destruction of life."

The discussion on the evolution of vocational aptitudes, in the chapter on "Vocational Selection," is one of the most interesting sections of the book. The author says, "In many ways those who have become adapted to their occupations show physical and mental qualities characteristic of their type." He then goes on to inquire whether it is not true that certain occupations have an appeal to the primitive occupational types and their derivatives. Does the type represented primitively by the shepherd, for example, now prefer occupations yielding an outlet for the protective instinct, such as gardner, breeder, doctor, priest, welfare worker, statesman? Does the hunter become the explorer, the rat-catcher, the pirate, the pugilist? The author admits that the whole section is highly speculative, and finally brings Thorndike to the rescue with a scientific investigation that proves a close correlation between interest and ability. The author does not bring his argument to the point of saying whether interests are the cause or the result of abilities. But his inference is plainly that interest comes first, ability second. It is possible to take issue with him here. It is quite plausible to maintain that interest comes from ability, or that neither comes about wholly as the result of the other, but is concomitant with the other.

The section on Intelligence Tests gives a brief survey of different kinds of tests, with illustrations and criticisms of the detail of their operation. A statement of the manner of constructing tests is given, and a statistical treatment described (rank correlation).

The final section under Chapter IV discusses vocational psychology. The different aspects of intelligence and special abilities are discussed, and some tests given which are useful in detecting special aptitudes. Perhaps an important sin of omission in this chapter is the lack of emphasis on standardization of tests before adoption. Professor Watts had a good chance to insist that before tests are adopted for actual use in vocational selection they must be standardized and their diagnostic value established. Surely the mere fiddling with psychological tests will do more harm than good to the acceptance of them by industry and commerce. It is certainly true that of the two aspects of the psychologist's training, namely, the pure psychology and the scientific method, the "content" side is the less important in the development of mental tests. It is almost plausible to say it makes no difference what the content of the test is, so long as it will differentiate between the successful and the unsuccessful in the particular trait being tested. To be sure, the psychologist is more likely to happen on the content which will have diagnostic value than any one else; but it is the statistician who proves or disproves whether the test is worth while. This doctrine will not be welcome to the "artful" psychologist, but the scientifically minded psychologist will agree with it.

Chapter VI is devoted to Industrial Unrest. Under the section heading, Class Consciousness, the author states as axiomatic that no student of social phenomena can understand the causes of class distinctions without some knowledge of abnormal psychology. The relation of individual abnormalities to social abnormalities is very close, the author says. He draws parallels of individual and social abnormalities, after introducing the concept of society as an organism. Dissociations and disintegrations of the dis-

turbed social mind will result in such things as rumor, ca'canny, and direct action, which he compares respectively with day-dreaming, obsessions and hysteria. He concludes that the main lesson from this for the student of social phenomena is "that you cannot preserve industrial peace by keeping what corresponds in society to the complex 'under,' 'in its proper place.'" The social complex is the struggle of the working-class for recognition of its worth and the repression consists in the ruling class disapproval. Out of all this comes the social inferiority complex which breaks out historically in peasants' revolts, modernly in strikes and sabotage. The social psychotherapy, then, is the restoration of a common purpose. Strangely enough, the therapy in this case is applied equally to the group which is mentally ill and the group which, if the literature of current economic theory may be believed, is not. In other words, the workers' group possesses the inferiority complex, the employers' group knows that workers and employers ought to make common cause. Only by postulating the social organism, then, is this idea to be satisfactory embodied in the theory. One fears that a socialist would find little here to comfort him.

The specific remedies advocated are, briefly summarized, as follows: the rich must not continue to emphasize the contrast between luxury and want by ostentation; there must be no contemptuous assertion that there must alway be poor persons; there must be no indignant righteousness about the ingratitude of the workers; and we must eradicate suspicion and class hatred from our industrial life.

In the section on the Springs of Conduct, Professor Watts criticizes the pure self-interest theory of motivation and adds to it mutual aid or self-sacrifice. He says that in the thwarting of any motives we are likely to stir up industrial unrest. These motives have an instinctive basis and are commonly unconscious in their operation. Managers must not ignore the real reasons for behaviour just because they have not been rationalized and articulated. It is not true that what is not consciously expressed does not exist.

The chapter on Industrial Unrest makes a very satisfactory impression as a whole. One feels, however, that Mr. Tead's book, which the author refers to liberally, makes a better job of explaining industrial unrest. The author makes no original contribution except to offer certain illustrative material of unusual sort, and to bring specifically to bear on this problem the theories of the psychoanalytic school. Whether the concepts involved in an application of these theories to society as an organism will be productive of good results must await trial. One can only express a hope that they might prove effective.

The final chapter is entitled "The Creative Impulse In Industry." It is the extreme specialization of function, the author believes, which is responsible for a large portion of industrial unrest. The craftsman holds that the new system removes interest from work and thwarts a fundamental impulse. Under the present system, however, success can be achieved in no other way than by rigid specialization. Something must be done to insure the continued vitality of the spirit of invention or the race is doomed. The united functioning of the work and play impulses in a single occupation should be the objective of the reformer. The play impulse is closely related to the constructive impulse.

In the section on Ideals in Industry, the author says: "It is when an object, or person, or principle excites not a simple emotional response, but a complex of emotions that we speak of the latter as a sentiment. A sentiment in action is an interest, and a harmony of sentiments illuminated by reason is an ideal." What is needed, then, as a sound remedy for unrest is the intelligent pursuit of an aim of common choice. Professor Watts then discusses five such possible ideals.

Co-partnership is the first. It fails of approval because it is interested only in the stimulation of the gain motive. The coöperative movement is a failure for a similar reason. Money alone will not buy idealism. But some coöperative ventures seem promising, such as the Manchester Building Guild, because they involve the

right of the worker to be consulted about affairs that affect him.

State Socialism is the next. It fails because it excludes material gain as a motive. If a system of state socialism were to be found in running order it might work; but the initiation of it could never happen.

Syndicalism is the third, and is rejected because, although it gives plenty of outlet for the self-assertive tendencies of control, it lacks every outlet for the protective dispositions and the constructive tendencies. It is almost sure to be sectional in its operation and to result in sectional antagonisms.

Industrial Democracy is the fourth and last. Guild Socialism, or the Whitely Councils, give play to all the motives that control conduct. Either of these is recommended. Each of them engages to enlist the active coöperation of all the workers. The workers will assume responsibility. With responsibility will come increased status, increased outlet for constructiveness, presumably increased satisfaction of the gain motive.

This responsibility will not be without its drawbacks. It is possible to admit frankly that not all workers are ready for it. Hence the final section, Industrial Education. This will result in the satisfaction of the instincts of curiosity. Under this head, the author reports the important experiments of Mr. Robert B. Wolf at the Spanish River Pulp and Paper Mills, in bringing about increased production without expanding the equipment of the plant, through the instrumentality of production records showing each man's average production, in terms of quantity and quality, as compared with the average. The spirit of friendly rivalry seems to be at the bottom of this improvement.

RETAIL STORE MANAGEMENT PROBLEMS

By Donald Kirk David. vi + 1050 pp. 1922. The A. W. Shaw Co., Chicago, Ill.

Reviewed by N. Kneeland

In the preface of *Retail Store Management Problems* Mr. David describes his book as "a collection of actual executive problems which have been gathered from stores located in many parts of the country." He goes on to say, "It attempts to present in a coördinated manner, problems which face executives of retail stores of various sizes and types."

To those who have been "fed up," so to speak, on theoretical discussions of store problems and statements of first principles to be applied as seen fit, this direct method of presenting material comes as a decided relief. It is a far cry from statements of theoretical problems to presentations of actual cases which have come up for consideration and decision. The practical value of the latter method naturally appeals most strongly to those whose business it is to meet similar problems every day.

This case method not only presents material which appeals to the reader as pertinent and vital, but it also stimulates real thinking. The facts are not laid out before him, cut and dried. They are offered for inspection and solution. The reader is therefore placed in a situation similar to that of the man to whom that particular problem presented itself to be solved. To make the analysis simpler, the author has followed up his statement of cases with a few problem questions bearing directly on situations described. These questions are formulated in various ways. They may call for a comparison of the different solutions of similar problems or a statement of the best method of solution, or may demand an appraisal of the solutions given. The questions are specific in character, referring to some definite point brought out in the case.

The scope of the book is broad, including the problems of accounting, statistics, organization, merchandise, selling, stock, buying and general administration. For this reason the volume is bulky, containing over 1000 printed pages, and consequently awkward to handle making it inconvenient for a text. The wealth of material and its excellent organization, however, make the book invaluable and the information easily available for reference.

The presenting to the students of Retail Store Management of the Harvard Graduate School of Business Administration, the content for a case system of instruction, Mr. David has shown that it is possible to use the same scientific method in presenting the problems of retail selling as has been used to such great advantage in law and medicine. It is a great step in advance, and it is to be hoped that this work will be but the forerunner of similar studies in the retail field.

The book represents a tremendous expenditure of time and industry in the collection of the data and care and study in the organization of the material. One can not help but feel the enormity of the task and appreciate the amount of labor and thought which such a research must have entailed. But one also feels that the results fully justify the effort expended.

Abstracts

Job Analysis of the Manager in Industry. EDWARD K. STRONG, JR. School and Society, April, 1921, Vol. 13, No. 329, pp. 456-462.

Discusses types of training which best fit men for executive positions. Two theories are held as to training. One is that the student is to become an executive primarily and an engineer only secondarily. The other theory is that the graduate is to become an engineer who will in addition be an executive. Both these theories are correct in general, in that there are these two types of executive positions in industry today.

But what is vitally needed is an extensive survey of the real conditions in industry, so that we may know what executives do and have to know.

To meet this situation Carnegie Institute of Technology surveyed three distinct fields of executive work, building construction, commercial printing, and metal working industries. The job analysis contained six parts, the duties of the position, the essential qualifications, qualifications not essential but of value, the route of the job, the probable line of promotion upwards and recommendations and notes. Not only was a curriculum as a whole determined in this way, but also the separate courses.

It is emphasized that as we develop objectives for our college curricula based upon job analyses, we are going to be forced to reorganize nearly every elementary economics and psychology course. These subjects must be revised so as to train students to perform definite functions in industry.

In conclusion: It is clear the operating functions in certain types of business are sufficiently similar throughout all companies so that college curricula can be developed that will train men to understand the functions performed throughout the business and to prepare them to start in at the bottom fairly well equipped to do the work assigned them.

What is needed in order to develop proper curricula along these lines, is first of all a knowledge of what the graduate will do after he leaves college; second, an interpretation of his functions into teachable units, each unit having a definite objective; and third, the preparation of courses in terms of the compound activities of the future executive and not in terms of class standards. When courses are so designed, when elements in college work are made similar to elements in after life, then and then only will the average student get the advantage of a transfer of training.

The Technique of Vocational Guidance as Investigated by the Institute of Educational Research. HERBERT A. TOOPS. The National Vocational Guidance Association Bulletin, January, 1923, Convention number.

Reports investigations limited to a study of the values of tests in vocational guidance. Special investigations regarding (1) academic pursuits, (2) mechanical pursuits and (3) clerical pursuits are reported.

A Method for the Study of Vocational Interest. MAX FREYD. The Journal of Applied Psychology, September, 1922, Vol. VI, pp. 243-254.

Reports results of two questionnaires, —that of Choice of Occupation, and Likes and Dislikes—as obtained from the following two groups: 43 seniors in Mechanical Engineering at Case School of Applied Science, and 30 seniors in the College of Industries at Carnegie Institute of Technology.

Analysis of the items that enter into the total score gives insight into the character

differences between the members of the two groups. With some exceptions the results would characterize the industries students, contrasted with the engineering students, as serious, quiet, thoughtful, and without particularly social tendencies except in the vocational sphere. It may be concluded that the industries students are more introverted than the engineering students.

What Induces Men To Become Salesmen? FREDERICK HANSEN. Printer's Ink. February 1, 1923. Vol. CXXII, No. 5, pp. 25-26.

Presents an analysis of the sources for life insurance agents, based upon a study of 1,324 agents. Slightly over one-half of all the agents were drawn into the business by a friend already engaged in selling life insurance. Only half of these men made good. Fifteen per cent of the men entered due to company officers "selling the job." Ten per cent entered the work due to their own initiative and are fair producers. Relatives in the business led six per cent of the men into the work but they are mediocre producers. Three per cent of the total gravitated into selling from other positions with the company. The remaining thirteen per cent have entered the business mostly through the less personal routes—advertisements, circulars from company, articles in magazines, university courses, etc. Two per cent of the total group came in as the result of seeing the company render some service. These men rank the highest in per cent of successful agents.

Apprenticeship and Craft Revival. GEO. W. THOMPSON. The Survey, Graphic Number, February 1923, Vol. XLIX, No. 9, pp. 573-75.

Records a plea for more judicious apprenticeship regulations in order that a pride in craftmanship, which is defined as efficient workmanship, may be better fostered.

Suggestion is made that better results could be attained by having the apprentice indentured to the appropriate trade union rather than to the individual employer.

The matter of remuneration during apprenticeship is also discussed.

The Universities and Training for Public Leadership and Social Work. J. E. HAGERTY. The Annals, January, 1923, Vol. CV, No. 194, pp. 162-164.

Restates the well known principle that private schools take up the teaching of a new branch more quickly than universities. This is what has happened in the training for social work. Up to the present time, the education of social workers has been a training for the immediate job rather than a grounding in the fundamentals that eventually lead to a bigger and broader viewpoint. The technique of social work has yet to be built into a literature. When that is done and social work takes its place with law and medicine on a scientific basis, the universities will be interested in giving the training.

Educational Departments of Corporations in the Pittsburgh District. DONALD DWIGHT KENNEDY. The Pedagogical Seminary, December, 1922, Vol. 29, No. 4, pp. 274-278.

Surveys the accomplishments of the corporation schools in the Pittsburgh district.

The continuation of the corporation school depends upon its utilitarian value to a particular company. This is judged upon its increasing the efficiency of the individual worker, and of the business as a whole by:

1. Making available a greater quantity of trained workers.
2. Making available more men of sufficient ability and training for promotion.
3. Making an improvement in the product.
4. Decreasing the labor turnover.
4. Increasing the intelligence and morale of the employees, thus decreasing waste and accidents.

The best indication that the corporation school is meeting these requirements is its rapid multiplication in the last decade.

In addition the report stresses the following points:

1. Little uniformity exists in administration of educational departments of corporations.

2. The educational director has to be a man of high ability who has technical and collegiate training and shop experience, and is of the executive type.

3. Courses are of the study-practice type and the pure class work type.

4. Length of training period varies from one week to four years.

5. Class rooms are located either in the company office building or in nearby public school buildings and libraries.

6. The training program of department stores includes:

a. Initial training.

b. Training on the floor.

c. Group instruction.

7. The training programs of public utility corporations include:

a. Plant school.

b. Vestibule schools.

c. Correspondence courses.

8. The training programs of industrial corporations include:

a. Specific job training.

b. Training in company business as a whole.

c. Technical training.

d. General training.

9. A practical study of industrial and public school relations is being made by the Pittsburgh chapter of the National Association of Corporation Training.

10. The large corporation school is found in operation by large companies which are situated in small communities.

Workers' Education—Its Achievements and Its Future. Address of Spencer Miller, Sr. American Delegate to First International Conference on Workers' Education, Brussels, Belgium, August, 1922. American Federationist, December, 1922, Vol. 29, No. 12, pp. 881-887.

Describes the functions and achievements of the Workers' Education Bureau of America and the Cooperative League of America in the field of Workers' Education. "Workers' education and the cooperative movement in the United States represent movements supported for the most part by the two great producing groups in the country, by the industrial workers on the one hand and by the farmers on the other." But with the shift of rural population to the cities, there has developed a growth of the cooperative movement in the towns.

The Cooperative League of America, started in 1916 to act as a central clearinghouse of information and a center of active direction, is essentially an educational endeavor providing "practical guidance based upon sound principles of cooperation" for cooperative enterprises. Three cooperative schools democratically organized and controlled by the consumers are in existence.

Both the cooperative movement and the workers' education movement have been slow of growth in the United States owing to the vast range of the country, the qualities of individualism and independence developed by the material conquest of a continent, and the mixture of races in the land.

Though the agitations of organizations of workers were largely responsible for the development of the free public school system, in the twenties and thirties of last century, the workers' education movement, so-called, is very recent. Before 1918, there were in existence only four educational experiments for adult workers controlled by workers' organizations and these experiments were not connected with each other and not backed by the American Federation of Labor as a body. By 1921, the number of "labor colleges" had grown to sixty and in April the Workers' Education Bureau, supported by affiliation fees from trade unions and labor educational enterprises and by donations from individuals, came into being to act as a clearinghouse for information for these enterprises and to encourage new ones. The American Federation of Labor has now given its support to the Bureau.

Training Foreman—"Trouble Shooting." Lefax, February, 1923, pp. 81-84.

The concluding article of a series on the training of the foreman, digested from a

course prepared by the Federal Board for Vocational Education. The series covers (A-I) Supervision of materials, (A-II) Cost elements of materials, (A-III) Cost control of materials, (B-I) Supervision of equipment, processes, and operations, (B-II) Cost elements of equipment processes, and operations, (B-III) Cost control of equipment, processes, and operations, (C-I) Supervision of working forces (C-II) Cost elements of working force, (C-III) Cost control of working force, and (D) Dealing with difficulties.

Locating trouble by the method of progressive testing is advocated and the procedure is said to call for the following steps:

1. Determine the nature of the difficulty definitely.
2. Analyze for probable causes.
   - I. By groups of causes.
   - II. By possible items in groups.
   - III. By testing out group items one by one, either by
     - a. Elimination.
     - b. Variation.

The Biggest Thing a Sales Manager Can Do For His Men. E. J. GALLMEYER. Sales Management, February, 1923, Vol. 5, No. 5, pp. 301-302.

Describes a plan of training salesmen based on the development of proper mental attitudes. "I can make a success of any salesman whom I can select and train, *provided* it is within my power to destroy this man's ability to think *negatively*." Success comes to all people in proportion as they overcome fear and other mental hazards. The salesman must have confidence in his ability, and he must have his knowledge organized. Second, the salesman's home surroundings must be encouraging and stimulating. Third, cooperation from the home office of the company must be helpful and cordial. Sales Managers must help salesmen solve their difficulties. Fourth, management must provide real leadership and expect big things from the salesmen. Fifth, management must deal frankly with salesmen, and show them their opportunities for accomplishment.

Why Men Work. JOSEPH K. HART. The Survey, Graphic number. February 1923, Vol. XLIX, No. 9, pp. 555-559.

Reports that theoretical explanations as to why men work have never been very plausible. Industrial managers and orthodox economists assume that man works in order that he may eat. They insist that this "economic motive" is the one dependable fact in human nature—the cornerstone on which a stable industrial order can rest; that all other motives are by comparison feeble and temporary. But when the facts of history and psychology are reviewed it becomes apparent that the world's work has not been kept going by fear of starvation. Industry today is living upon the accumulated work habits of preceding centuries. Machine industry has been possible for a century because of an accumulated fund, a working capital of work habits which could be depended upon. The love of craft became the legend of families and communities in the ages of free labor. This love of work has survived the machine—it has had enough momentum to remain alive for a century in spite of the fact that a sordid, unimaginative industry is burning it up like flax.

The Application of Psychology to the Solution of Business Problems. MORRIS S. VITELES. Lefax, February, 1923, pp. 29-33.

Contains an interesting explanation of the laws of habit formation and cites examples of their use in the training of motormen.

What Can Psychology Contribute to Our Knowledge of the Mechanism of Mental Disorder? With Some Comments on the Term "Depression." C. MACFIE CAMPBELL. Psychological Review, November, 1922, Vol. 29, No. 6, pp. 447-456.

The physician dealing with symptoms of diseases seeks their explanation in the light of principles which he has acquired in the various disciplines preparatory to clinical work. He calls to his aid also that discipline which is especially concerned in

establishing the principles underlying human behavior, the science of psychology.

The physiologist and the psychologist may be of help in clinical problems in one of several ways: they may have accurate observations on controlled material that may throw light on the mechanism of the disordered reactions; they may suggest methods of approach to the solution of the problems; they may even adopt a problem as their own, and work at it under the accurately controlled conditions of the laboratory.

It was natural that in the development of accurate laboratory procedure, problems of perceptual experience and simple reactions should have at first to a large extent monopolized the field; the problems of the emotional life lend themselves less readily to laboratory investigation. Much of the raw material of life with which the physician has to deal is intimately connected with the emotional life of his patients, and he eagerly welcomes the cooperation of the psychologist in the investigation of this field.

The term "depression," like so many other psychological terms, tends to be considered a definite entity, which in virtue of its independent existence becomes the cause of further phenomena. It is prudent to translate the abstract term back into the complex situation for which it stands, and in trying to understand sequences it may be necessary to consider the total biological situation. As illustration of this, the case of a woman patient is given in detail.

With these detailed data one feels less inclined to look upon the "depression" or rather the patient's complicated play of words as an independent change coming on through some subtle and unknown changes in the physiological economy of the patient. Nor does it seem to be merely the expression of some vague constitutional lack of stability. It seems rather to be merely one aspect of a very complicated biological situation. In that biological situation, there are present unsatisfied cravings, vague yearnings, organic desires, repressed fantasies, stifled irritations, strivings towards religious solutions.

The term "depression" fails to do justice to the chromatic richness of the inner experience of the patient. There is need of a more sufficient and accurate terminology for describing the emotional aspect of human experience.

Monotony and Industrial Unrest. Adolph Bregman. The Survey, Graphic number, February, 1923, Vol. XLIX, No. 9, pp. 552-554.

Describes changes which have resulted in the development of industries and points out that one of the largest factors in the unreliability and inefficiency of labor is the fact that the work itself is, and is becoming more and more, uninteresting, monotonous, and distasteful. To overcome this, it is suggested that:

1. Workers should be placed in a position commensurate with their mental ability.
2. As much responsibility as the worker can successfully bear, should be part of the job.
3. Wherever possible, the product of each man's work should be an entity in itself that will give the man a genuine feeling of having accomplished something when he has finished.
4. Where it is impossible to include the factor of responsibility in the work, and where the work must necessarily be divided, for the sake of production, it may be varied from period to period.

Effects of Loss of Sleep. E. S. Robinson and F. Richardson Robinson. Journal of Experimental Psychology, April, 1922, Vol. 5, No. 2.

The effects of loss of sleep may vary considerably from individual to individual. There is a suggestion of this fact in the results of a previous experiment. This second experiment deals with a larger group of students and purposes to observe the general effect of loss of sleep upon a group and its more specific results upon individual subjects. The insomnia group consisted of twenty-five college students. The control group consisted of thirty-nine college students. The members of the control group lived as usual during the

experiment. The members of the insomnia group abstained from sleep during the first day and night of the experiment and until the completion of the second testing. Both groups were given forms 5, 7, and 9 of the Alpha examination, in the mornings of the three successive days the experiment was in progress. The students were also asked before the examination on each day to rate their feelings of freshness or tiredness as follows: very fresh, fresh, as usual, tired or very tired.

Immediately after the examination on each day, the subjects were asked to rate the amount of effort felt to have been put forth on the taking of the examination. The scale was as follows: best effort, good effort, ordinary effort, not much effort, and practically no effort. The subjects were also asked to hand in statements of any specific effects of loss of sleep which they noticed.

CONCLUSIONS

The qualitative results of this experiment show that loss of sleep is marked by a variety of manifestations of disorganization which differ considerably from individual to individual but which are prominent enough to be important. Our attempts to measure the magnitude of the effects of loss of sleep for one or two nights by means of standard test procedures brought practically negative results. This does not mean, however, that the functions represented by the tests were unaffected, but merely that the effects were not too great to be compensated for by an extra amount of effort or interest, the existence of which our ratings of effort give good evidence.

An interesting problem is furnished by the appearance of the extra effort in the insomnia group. These subjects felt various symptoms of their condition as is shown by their tiredness ratings and the more specific reports, and these may have stimulated that alteration in their method of work which we loosely describe as work with greater effort. There was every evidence, too, that the insomnia group working under unusual conditions took interest in the experimental situation after the sleep group, unaffected by loss of sleep, had become relatively bored. Perhaps a combination of these factors was operative.

Baker-Gompers "Open Shop" Correspondence Resumed. American Federationist, February, 1923, Vol. 30, No. 2, pp. 156-167.

Continues the correspondence between Newton D. Baker, President of the Cleveland Chamber of Commerce, and Samuel Gompers, President of the American Federation of Labor. Parts of the correspondence have already been published in the New York Times and in the November "Federationist."

In the letter dated November 23, 1922, Newton D. Baker states that the object sought by the Cleveland Chamber of Commerce is the creation of an industrial relationship in which the primary right of organization on both sides will be recognized and an atmosphere of cooperation in the public interest substituted for class war in disregard of the public interest. This can best be secured by an honest "open-shop" policy. He does not agree that employers naturally want to run closed non-union shops and employees naturally want closed union shops. Employers want to make money by operating economically their industrial enterprises and desire that employment relation which is subject to least interruption by discontent and productive of the largest output in quantity and quality for the wage paid. Workers want to make money under as favorable conditions of employment as to hours, continuity, sanitary conditions and comfort as possible.

Just as nations are being forced to realize that there is no such thing as a successful war, so industrial relations in the United States must be changed from a state of civil war to an attitude of common service of the common good. Mr. Gompers' letters show no way whereby, under the theory of the closed union shop, the public interest in labor disputes is to be recognized and protected. Though, in the present state of the employer and employee mind, Industrial Court laws are more likely to

be a hindrance than a help, yet the philosophy of the paramount claims of the public interest must be accepted.

The policy of conflict has been unsuccessful in advancing the cause of the workers. An enclosure with the letter shows that, in Cleveland, "after all these years of struggle, only 17 out of 759 establishments, and only 1,736 out of 163,839 employees operate under the closed union shop policy."

In his reply, dated January 13, 1923, Samuel Gompers states that in his arguments for the "open shop," Mr. Baker has overlooked the fundamental consideration that the formation of unions is an expression of the feeling which possessed the men who first battled against the control of political institutions by a few and the exclusion from political expression of the many. If democracy has any real justification, it is as thoroughly justified in our industrial life as it ever was in our political life.

If it is the expressed wish of the workers to have a union and to have a union shop, then there can be no denial of that wish without an exercise of power on the part of the employer, which of itself must be construed as a repudiation of democratic methods and of democracy itself. In an honest "open shop," if there is no trade agreement there is likely to be no machinery by which workers can approach the employer with regularity through channels which the employer is bound to respect. And even if the union workers are represented through their organization, the non-union workers have no adequate means of expressing themselves or protecting themselves. If all the workers in a shop elect to join unions, it is quite in keeping with the principles of democratic conduct that in order to prevent destruction of standards through the introduction in the plant of a majority of non-union workers, none be employed except those who belong or are willing to belong to the union.

Unions are opposed to industrial strife. They offer to employers the opportunity for cooperative relationships through which may be developed the greatest possible degree of service and the greatest possible degree of justice to all. The labor movement has done much to foster education, to shorten hours of toil and lengthen life, raise wages and increase independence and decrease dependence. Unions resent injustice in industry and raise the masses of the workers. They are not waging a class war, but are working for a development of the social order in which unrestrained exploitation of the workers by great financial powers and great combinations of employers will be impossible.

Meeting the Labor Problem in the Clothing Industry. H. S. GILBERTSON. Administration, February, 1923, Vol. 5, No. 2, pp. 181–190.

Unionism brings shifting of initiative in industrial relations from employer to employed. Labor effectively organized from within is labor awake and on the move. Industrial relations thus become labor control in a very direct sense. The source of initiative is unimportant so long as this force promotes contentment and increases production. A conspicuous example of such a change is found in the clothing industry. The present status of the labor side of the clothing industry is a highly effective industrial union, the Amalgamated Clothing Workers of America. Its president, Sidney Hillman, is probably the most resourceful leader in American labor circles. Today employer and employee meet on equal ground and settle their differences through a Board of Arbitration. Strife has not been eliminated but most of its ill effects have been done away with. The type of labor control worked out for the clothing industry is satisfactory to that industry. It is doubtful if this type of labor control would fit the problem of other fields because of conditions peculiar to the clothing industry, but it is proof that industrial relations can be handled in a manner which is satisfactory to all concerned.

Why the Railroad Strike Failed and the Coal Miners Won. WILLIAM Z. RIPLEY. The Survey, Graphic number, January 1, 1923, Vol. XLIX, No. 7, pp. 436–438.

Reports at length the situation in both fields and concludes that in the railroad

field the trouble was over standardization of wages which needed to be restrained, having developed to the point of top-heaviness and unworkability. In the coal situation, on the other hand, industrial unrest necessarily results from understandardization of wages and production costs.

Employees' Mutual Benefit Associations. A Survey by Industrial Relations. Bloomfield's Labor Digest.

The average worker is either unwilling or unable to provide of his own accord for the exigencies of sickness, accident, old age, and death.

His failure to make provision for the future and the resulting lack of independence, uncertainty of support and failure when the unexpected need arises tend to destroy ambition, efficiency and stability.

The two problems above confront the employer. The survey covers activities of employee mutual benefit associations throughout the country. What appears to be the best practice is stated in detail. Gives three general types: (1) Those administered solely by employees; (2) Those administered jointly; (3) Those administered solely by the company. The divisions are not always clean cut.

Associations are formed for insurance benefits. The form varies from a nameless group to incorporated associations. The employee must be encouraged to provide for the future since wage earners no longer have motives for saving. The survey recommends plans covering the following: membership, dues, administration, funds, benefits, and dissolution. Appended is a descriptive chart of all the associations studied.

Attendance in Four Textile Mills in Philadelphia. Industrial Research Department, Wharton School of Finance and Commerce, University of Pennsylvania. The Annals of the American Academy of Political and Social Science, November, 1922, Vol. CIV, No. 193, pp. 187–222.

Preface: This study was started in connection with the standardization of records at one of the textile plants with no intention of using the data for publication. The inclusion of other plants and a continuous record over a considerable period of time gave to the conclusions with regard to attendance, facts which seemed to be of wider general interest than that of the personnel of the plants involved.

No attention is given to methods of reducing absence. The emphasis in the study is upon ascertaining the extent and amount of lost time. The variation in attendance in its relation to production is considered with a view to determining the effect of the fluctuations from time to time in planning and routing work.

Absenteeism distributes its loss and receives less attention than it should. It also affects turnover seriously. The article reviews early efforts to obtain regularity of attendance. Efforts at prevention of absence are recent. Tardiness is not studied in the report. Gives an important list of reasons for absences with tentative classification into eight divisions, (1) Production, (2) Family affairs, (3) Personal affairs, (4) Community affairs, (5) Physical, (6) Climate and weather, (7) Miscellaneous, (8) Report lacking. Percentage of absenteeism ranges from 3.2 per cent in October to 7.2 per cent in March and April in one firm studied. The curves of absenteeism are similar for each of these firms. In one plant, this percentage meant 5,287 days lost by the men and 8,105 days lost by the women. This absenteeism is not distributed but represents an enormous aggregate absence for a restricted number of employees. Monday represents a recurring peak of absences. In 1922, the turnover peaks are highest in April and May, months in which the absence rate is lowest. The firm with lowest turnover had lowest absence rate.

Ill-health accounts roughly for one-half of the total time lost. Family and community reasons account for about one-fifth of the absences. Lost time in some form is highest for some of the most important occupations. 26.7 per cent of total absences for women are for a period of 10 or more working days; only 19 per cent of the men's absences fall in this frequency in-

terval. Cold weather affects the curve of absence of women more than warm; the men's curve is little affected by winter weather. Absenteeism is markedly affected by the first excessive days of heat. Rainfall exerts an unmistakable influence in spring and late autumn months. Results are similar to other studies. The difference in attendance on days of the week shows there is yet a margin of preventable absence that could be reduced.

Workmen's Compensation Number of Labor and Industry. Department of Labor and Industry, Commonwealth of Pennsylvania, November, 1922, Vol. 1, No. 7, pp. 1–22.

The first section shows that seven years' experience of the Workmen's Compensation Act in Pennsylvania has shown the need for educational work to explain the law, its benefits and technicalities to both employers and employees. Also, since the aim of the Compensation Law is to prevent accidents, safety work is of vital importance and the Industrial Board has recommended the establishment of a safety organization in every plant.

Section two describes the work and policies of the Workmen's Compensation Board which hears disputes and supervises all awards. This body, composed of three members, is a travelling board, which passes on petitions from employers to act as self-insurers, on compensation agreements, on application for commutation, etc. In the case of agreements, the Board has now established the opinion, upheld by the State Supreme Court, that agreements are elastic documents, to be moulded and controlled by the Board from time to time during their statutory period as the facts in each particular case develop.

Section three deals with Administration and Procedure. All accidents occurring during the course of employment resulting in an injury which causes the loss of two or more days to the injured must be reported to the Bureau of Workmen's Compensation. This Bureau receives on an average 150,000 accident reports a year and compiles statistics from these reports. A summary of the awards under the Act is given.

In section four the insurance feature of the act is described. The employer can:

1. Insure in the State Workmen's Insurance Fund.
2. Insure in a stock company.
3. Insure in a mutual company, or
4. Carry his own insurance.

An amending Act of April, 1921, provided a penalty of $100 per diem for each employer in the event of failure to insure under one of the four provisions of the Act.

In Pennsylvania, domestics and agricultural workers are exempted from the provisions of the act. For the case of agriculture, the need for legislation is becoming every day more acute.

The last section deals with the work of the Bureau of Rehabilitation, which tries to restore lost earning capacity to injured workmen. This is accomplished by giving training courses. The Rehabilitation Bureau makes every effort to relieve economic pressure upon a disabled person, from its own funds, where possible, during a training course; from other existing relief agencies or from any proper source from which relief from such economic pressure may be obtained.

On the other hand, however, workmen's compensation in Pennsylvania has in a great majority of cases provided the economic support that has made it possible for many disabled persons to be trained for and placed in suitable employment by the Rehabilitation Bureau.

Children's Work Accidents. Department of Labor, State of New York. Special Bulletin No. 116, January, 1923, 42 pages.

Deals with compensated children's accident cases, namely those which received compensation under the New York State Workmen's Compensation Law, and is therefore limited:

1. To those groups of workers under eighteen in industries covered by the compensation law.
2. To those places of business subject to law.
3. To those cases where the disability lasted more than two weeks.

Two large occupational groups, those in Domestic Service and Agriculture, a total

of 22,091 boys and girls in 1920, are not included under the compensation law, and an indeterminate number of children are at work in certain commercial employments not specified in the law.

No figures are available from which to estimate the accident risk in different industries, but figures show that almost 2000 compensated cases occurred in New York State in one year.

The purpose of the Report is:

1. To ascertain to what extent section 146 of the Labor Law, which prohibits children under sixteen years of age from operating certain dangerous machines, actually prevents accidents to that group.

2. To determine whether, and if so what, additional rules are necessary to safeguard children under eighteen years from industrial accidents. (Power to make such rules is given to the Industrial Board under section 146, subdivision 11.)

The first section of the report explains the classifications and gives the salient points of the tables. In the following section, headed "Conclusions and Recommendations," it is suggested that, since by far the largest number of accidents occur on metal cutting or stamping machinery, which come within the group of machinery operations prohibited for children under 16 years of age, no child under eighteen years of age be permitted to work on a cutting or stamping machine in the metal industry.

Accurate information on the part that youth plays in the cause of industrial accidents is unobtainable but many factors —seem to point to the fact that children by the very nature of their youth are less able to protect themselves than those more mature and consequently more steady. Raising of the school-leaving age to at least 15 years would seem to be desirable.

Nine children under fourteen had accidents and were too young to be legally employed. The courts have decided that the fact of a child's employment gives him a right to compensation. The employer who illegally employs a child should be penalized by the adoption of the treble compensation plan.

It is also recommended that placement agencies, employers and factory inspectors pay particular attention to the question of lifting and pushing heavy objects by young workers. It was found that among the accidents, strain caused 37 and the dropping of heavy objects, being handled by the worker, caused 52 more. The question becomes largely a matter of standardization in the individual plant and of training. No definite limit of weight can be set. Common sense and supervision and training in how to lift or push without strain, will do more than hard and fast regulation.

The last section consists of 5 tables, analyzing 1,817 accidents amongst 248,455 employed children in New York State, and covering the period July 1, 1919, to June 30, 1920. The following classifications are used: (1) Industries and age groups, (2) Location of injury, (3) Nature of injury, (4) Nature and location of injury, (5) Cause of accident.

Child Labor in the United States. Comparison of State and Federal Child Labor Standards for Work in Factories. United States Department of Labor, Children's Bureau.

Answers ten questions on Child Labor in the United States.

1. In the United States in 1920 over one million (1,060,858) children 10 to 15 years of age, inclusive were reported by census enumerators as "engaged in gainful occupations." This number was approximately one-twelfth of the total number (12,502,582) of the children of that age in the entire country.

2. Of the child workers 10 to 15 years of age, inclusive, in the United States in 1920, 647,309 or 61 per cent were reported to be employed in agricultural pursuits, 17.5 per cent employed in manufacturing and mechanical industries, domestic and personal service, 8.3 per cent and in clerical occupations 9.4 per cent.

3. When all occupations are taken into account the proportion of children at work is much larger in the South than in any other section of the country.

4. The census of 1920 records a considerable decrease since 1910 in the number of children reported at work.

5. This decrease between 1910 and 1920 is a real and not apparent decrease. There is a smaller number of children employed in each of the principal occupational groups other than the agricultural except two-public service and clerical work, neither of which was affected by the Federal child labor laws.

6. Both State and National Standards relating to child labor have been raised in the last decade. During this period Federal regulation of child labor was for the first time in effect. Also the standards of compulsory education laws were generally raised so that fewer children could leave school for work.

7. Since the Federal child labor tax law was declared unconstitutional on May 15, 1922, the Federal Government has had no jurisdiction over the employment of children in the States.

8. The child labor laws of the States set up certain standards—age, educational, and physical as a rule—which the child must meet before he can be employed in a specified list of occupations. The nominal age minimum for work in factories in all except three states, and for work in numerous other employments in many other States is fixed at 14 years or over for both boys and girls. The 48-hour week is nearly always prescribed in States which require the 8-hour day.

9. Division 9 gives the minimum standards for children entering employment, adopted at the Washington and Regional Conferences on Child Welfare called by the Children's Bureau in 1919, which are as follows:

All children between 7 and 16 years of age shall be required to attend school for at least 9 months each year.

A child shall not be allowed to go to work until he has had a physical examination by a public school physician or other medical officer.

Minors at work shall be paid at a rate of wages which for full time work shall yield not less than the minimum essential for "the necessary cost of proper living, as determined by a minimum wage commission or other similar official board."

10. The last section is merely a bibliography of publications of the Children's Bureau on this subject.

How Far Can Functionalization Go? Oliver Sheldon. Administration, February, 1923, Vol. 5, No. 2, pp. 199–207.

A statement of British experience. Most firms are in transitional stage. Equipment activities are functionalized. Instillation and upkeep is not functionalized. Other departments are partially functionalized. Differentiates between centralization and functionalization. Several functional classifications are given to show how unsettled conditions are at present. Functionalization meets up with limitations. Limits placed on coördination must be reckoned with. Functionalization divides a business into scientifically determined sections irrespective of operative processes. Functionalization should not undermine departmental control. Individual control must be maintained because the worker wants only one boss. Thus there are limitations to functionalization and its principles must be modified to meet the conditions.

Modern Methods in "Service" Industries. Louis G. Rowe. Industrial Management, February, 1923, Vol. LXV, No. 2, pp. 77–83.

Describes a system of management in automobile repair shops which secures (1) the most economical methods as regards time operations, (2) increased efficiency of the operator by standardizing tools and work places, and (3) reduction of fatigue.

The principles of job analysis must be used in determining methods to be employed. From their application will come minute descriptions of repair jobs of every description and definite standards for methods to be employed on any job. Time studies, wage incentives, and scientific control of operations are essential elements after establishing unit elemental times and methods for the majority of operations. Certain constants must be added to take care of varying conditions such as fatigue. Such standard times can be made the basis

of a wage incentive system and of an efficiency rating system. The incentive wage may be based upon the saving in time made by the operator over the standard. A bonus would be paid over and above the weekly wage, varying according to the per cent of time taken to time allowed. A sliding scale of bonus payments may be set up to determine the actual bonus paid for any particular saving above standard. The reduction in unit costs under such a plan will more than offset the increase in overhead charges.

Getting The Coöperation Of The "Black Gang." Part III of Modern Management Methods in the Power Plant. BROWNING ROBINSON. Industrial Management, February, 1923, Vol. LXV, No. 2, pp. 121-125.

Gives methods and illustrations by which to secure the interested coöperation of firemen in increasing the efficiency of furnaces. After the most approved methods have been supplied to the firemen, and they have been told that they can decrease their labor and increase their pay by using these methods, motivation must be supplied through contests in order to secure results.

First, fair standards must be set, and these standards must be accepted by the men themselves. Combustion efficiency is the only fair standard in the boiler room. The efficiency of each fireman will follow and closely correspond with the scale showing the percentage of carbon dioxide which he produces during his watch at the furnace. This being explained to the black gang, tell them the high man for each week or each month will have his name broadcasted throughout the plant, put at the top of the list in the power house, etc. He may win a turkey, money, or a lay-off. But a material reward is not at all necessary.

Erect a blackboard in the boiler room. Chalk up each fireman's name and credit him with his actual carbon dioxide production average. This bulletin will never become covered with cobwebs, and every man will be silently or vociferously engaged in getting to the top and cheering when he succeeds, too.

The zest of competition, plus a daily bonus for results obtained above the standard, will raise combustion efficiency and pay big dividends.

The Broader Conception of Time and Motion Studies. WILLIAM BAUM. The Society of Industral Engineers Bulletin, December, 1922, Vol. 4, No. 10, p. 7.

Quotes F. W. Taylor's declaration that "Scientific Management attempts to substitute in the relation between employers and workers the government of fact and law for the rule of force and opinion. It substitutes exact knowledge for guesswork and seeks to establish a code of natural law equally binding upon employers and employees." He sees in Time and Motion Studies "an accurate scientific method by which the great mass of laws governing the easiest and most productive movements of man is investigated." These principles are frequently misunderstood and misapplied. A general "housecleaning," involving the installation of the best machinery and tools compatible with economy, the overhauling of existing machinery, the determination of its best effective speed and feed, the study of material, attention to ventilation, sanitation, etc., should precede Time and Motion Studies.

The idea of this study is to determine the normal speed which the group can maintain continuously without harm to health and happiness. The work of time study consists (1) of analysis of the time elements of jobs including computation of time to be allowed for delay, for rest, etc., and (2) of synthesis, of constructive work leading to the standardization of tools and conditions, the invention of superior methods and machines.

The Gilbreths have perfected the technique of taking time and motion studies by their moving picture camera method, and have solved the problem of "the transfer of skill from management to men." Their methods, however, are not applicable to industry in general, a reliance must still be placed on the stop-watch.

Time and Motion study is usually limited at present to the shops of the metal indus-

try, but a new field is opening in the standardization of activities in construction, offices, warehouses, jobbing houses and general business eterprises. As an example of this, standardized operations in a large public utility are named.

The success of practical Time and Motion Study does not depend only upon the technique and skill with which it is administered but with equal force upon the art of putting its psychology into practice. The best time study man is handicapped if the relations of management to workers are not marked by liberality and fair dealing. The modern time study man must understand human nature and be able to secure the active coöperation of the employees in the establishment of production standards.

An Individual Curve of Learning—A Study in Typewriting. BLANCHE M. TOWNE. Journal of Experimental Psychology, April, 1922, Vol. 5, No. 2, pp. 79–92.

Gives the practice curves while learning to use a Corona typewriter. There are two practice periods, the first one covering one hundred days, the second one seventy-six days. An interval of six and one-half months intervenes between the two.

In the first curve of accomplishment five correct letters are counted off for each error. The space between the letters and the shift between the lines count as one letter, while any letter, figure or mark requiring the use of the shift key receives the value of two.

The first accomplishment curve has no characteristic shape. It rises slowly during the first forty-five days, seems to remain at a level for the next twelve days, and rises rapidly again to the end of the first hundred days of practice, except during eleven days, when the curve seems to remain at the same level, a very high one. At the beginning of the second series of practices, the curve drops to a much lower level and maintains it for about fifty days. Then there is a decided drop for five days, followed by a marked rise when the level of the last plateau in the first series is reached. The last six days of practice reached a level not attained at any other time during the whole practice. The learning was not uniform, but proceeded irregularly, attaining a high score only to fall back for a long or short period before attaining it or passing it again. The general shape of the error curve shows a rapid decrease at first. This becomes much more gradual as practice continues. It is not a smooth line but is full of fluctuations. The per cent of error for the first week was 11.69 and for the twentieth 1.35, a difference of ten.

GENERAL CONCLUSIONS

1. Habits of all orders make progress simultaneously, some in a less and some in a greater degree.

2. A single real plateau which was short and genuine occurred in the practice after the seventy-seventh day. The others were not real.

3. Intense effort, consciously or unconsciously applied, helps, all other things being equal.

4. The days of greatest accomplishment were generally accompanied by a pleasant feeling, except after a hard struggle against great odds, when the unpleasant feeling held over for a long time.

5. Breaks in the regularity of the practices seem to cause neither gain or loss in the net result.

6. The error curve decreases gradually for the first sixty practices and then proceeds more slowly toward the vanishing point.

7. There is a level in both the curve of accomplishment and the curve of error which is normal for this learner.

8. Errors were caused (a) by new material, (b) by use of new parts of the machine, (c) by extensive use of the shift keys, and (d) by speeding up over the general average.

9. Physical and mental conditions have an effect upon the results produced, the better the condition, the greater the accomplishment.

10. In graded material, work which is much harder than just preceding, causes a slump in enthusiasm and a dislike for the subject in hand.

A Survey of Delivery Operations. H. B. WESS. Administration, February, 1923, Vol. 5, No. 2, pp. 147–156.

Delivery superintendents and transportation managers are met with the problem of knowing where their drivers are and how they spend their time. This scientific study sheds light on a problem which has been handled by guess work.

The driver's daily routine is analyzed so as to give the details of a working day. The analysis shows that only 55 per cent of the driver's time is spent on the route. Production could be increased if the time on the route could be increased. Of the time spent on the route 20 per cent of the time is spent in actual "wagon to customer deliveries." Twelve per cent of the time is spent in traveling from customer's house to customer's house. The remainder of the time spent on the route is used up in further sorting, making of records, and in time wasted.

An analysis of net delivery shows the amount of time spent in the motions of walking from the wagon to the front of the house, then to the customer's door, handing the package to the customer, leaving the customer, and returning to the wagon. The largest part of this time is spent in handing package to customer and making change, and next in amount of time taken is walking from front of house to customer's door. Reaching the customer's door in an apartment house and dealing with servants run the time up which is allotted to actual delivery. Types of houses, their location as to whether on large estates or in a busy section where parking is difficult, runs up the time.

An analysis of the various steps in the actual productive delivery process should enable an organization so to standardize and train its drivers as to convert the actual effort exerted by them into more efficient and hence greater production.

The Government and Safety. ETHELBERT STEWART. National Safety News, January, 1923, Vol. 7, No. 1, pp. 27–28

Beginning with the erection of lighthouses for the protection of ships back in the days of the colonies, the government has been a leader in carrying out safety programs. It is interesting to note the vast field of industries touched in its institution of a nation-wide safety practice.

In one year the Coast Guard saved 2954 human lives and rescued 14,531 persons.

The Steamship Inspection Service inspected 13,131 vessels last year.

The Bureau of Locomotive Inspection made 60,812 inspections last year—a Safety Bureau also inspected 865,858 freight cars and 20,082 passenger cars.

The National Park Service maintains 200 men for four months each year.

The Post Office Department provides safety devices for catching mail bags.

The Government Printing Office has 14,000 machines which are equipped with safety devices.

The Meat Inspection Division investigated 892 establishments in 265 eities and inspected 62,055,485 animals.

The Administration of A Food and Drug Act checks all impure foods and harmful drugs.

The Forest Service employs a large number of men to prevent forest fires.

The Weather Bureau warns the shipping industry.

A complete list of all the government activities in the safety field is not available at the present time but we little appreciate the magnitude of the great national service it renders.

Observations on the Reliability of the Comf-Thermometer (Fresh-Air Gauge) as an Indication for the Cooling Effect of Air. H. I. EADIE, D. H. ASH, and F. C. ANGUS. The Journal of Industrial Hygiene, February, 1923, Vol. IV, No. 10, pp. 441–447.

Concludes from stated observations that the comf is a reliable instrument for indicating whether the air conditions are satisfactory, provided the following precautions are taken:

1. That specially selected electric light bulbs (33–35 watts) are used.

2. That a practically steady main line voltage is used.

3. That each instrument is calibrated before use against a kata-thermometer.

4. That the instrument is not used in a fast air current.

Checking Plans and Specifications for Safety. National Safety News, February, 1923, Vol. 7, No. 2, pp. 447–54.

Reports the contents of No. 53 of the Series of Safe Practices Pamphlets published by the National Safety Council of Chicago. Points out that the opportune time for careful consideration of safety measures is when plans and specifications are being made for new buildings or alterations of existing equipment. An extensive list is given showing some of the more important items that should be considered at such a time.

Preventing Eye Injuries in Industry. National Safety News, February, 1923, Vol. 7, No. 2, pp. 17–20.

Describes ways and means of securing the coöperation of employees in the elimination of eye injuries by use of various devices described in detail. Also cites various "appeals" found effective in varied industries.

Refinements of Safety in Union Carbide Plants. George Earl Wallis, National Safety News, January, 1923, Vol. 7, No. 1, pp. 8-10.

The develoment of a strong sentiment for safety in all departments of the Niagara Falls works of the Union Carbide Company has been the result of the safety program used for a number of years.

In addition to the installation of all kinds of mechanical safety devices, which is handled by the engineering department, the company begins by selecting men of a certain physical and mental quality. This standard is maintained by an efficient medical department and safety department. The former is concerned with plant emergencies, the survey and adjustment of jobs and man power, and the control of disease and improvement of environment. The safety department rewards foremen and workmen who have for the period of one year demonstrated unusual interest in safety. They have talks and pictures on safety and once a year put on a safety show in the largest theatre in town, to which are invited all employees and school children.

Publicity Wins Two Months' Safety Campaign. National Safety News, February, 1923, Vol. 7, No. 2, p. 20.

Reports the results of a no-accident campaign in the Whitaker-Glessner Company's Works at Portsmouth, Ohio, and emphasizes the fact that persistency in keeping the subject of safety foremost in the minds of the employees was the keynote of the success.

Teaching Safety in the Continuation School. Luther B. D'Armond, National Safety News, February, 1923, Vol. 7, No. 2, pp. 29–30.

Reports methods used in inculcating habits of safety into the lives of the youthful employees of the Illinois Bell Telephone Company through the medium of the continuation school for boys and girls employed in the Chicago offices of that company.

Classifying Minor Injuries in the Plant. G. E. Minshull. National Safety News, February, 1923, Vol. 7, No. 2, p. 13.

Describes an effort to create a feeling against having a "major" accident so strong that an injured man hesitates to step into the limelight as a major accident case, and instead of laying off the next day he makes a special effort to report for work.

In the Du Pont Company plants a classification of minor accidents into two groups —"sub-majors" and "minors" is now the practice. In the first group are all cases involving more than a couple of redressings or trips to the hospital and all cases which involve placing the injured on lighter work or any allowances made for his decreased productive ability. In the second class are thrown the balance of all injuries not resulting in loss of time greater than the balance of the shift on which the acci-

dent occurred, or in other words, the true "minors"—the miscellaneous cuts, bruises, etc., involving only slight medical attention and practically no decrease in productive ability of the injured.

Through weekly reports of the sub-majors attention is brought to certain injuries previously regarded as insignificant, which are shown up as resulting in losses often times greater than many major injuries. Then through elimination of sub-major causes the major injuries themselves automatically decrease.

Accident Prevention at Allis-Chalmers. Frank E. Redmond, National Safety News, February, 1923, Vol. 7, No. 2, pp. 11-12.

Describes the functioning of precautionary measures in a plant where all types of heavy machinery are made. A committee of eight regularly inspects the 125 acres of territory covered by the works. At the weekly meeting of superintendents, the committee's observations are written on a blackboard and all unsafe practices noted are set opposite the name of the superintendent in whose department it was found. The constant endeavor, therefore, of these department heads is to keep the spaces opposite their names free from such notations; their concern is in turn passed on to the foremen under them, with the result that the entire plant and every worker and every machine in it are at all times subjected to a close scrutiny for dangerous conditions or practices.

New and improved safety measures are described in detail.

Examinations for Auto Drivers. National Safety News, January, 1923, Vol. 7, No. 1, p. 43.

Eleven states now require chauffeurs to pass examinations in road tests and oral or written tests before they are granted license to drive. The examinations are designed to meet the ordinary and special requirements of different drivers. In 1921 the state of New Jersey examined 89,952 applicants and registered 12,808. The written and oral tests are composed of questions covering the fundamentals of driving, particularly as applied to emergencies. Diagrams are also used to find out just what the applicant would do in a definite situation. The results show healthy decrease in motor vehicle accidents in all states which carry on this practice.

What Mechanical Guiding Has Done in One Tanning Industry. National Safety News, January, 1923, Vol. 7, No. 1, pp. 13-16.

Marked progress has been made in the application of mechanical safety devices in the tanning industries. The unusual hazzards, such as wet floors, open vats level with the floor, and various other accident inviting conditions peculiar to this industry have been done away with. Guards have been erected, and automatic shut offs, which are so sensitive that the slightest extra pressure is sufficient to turn off the power, have been put on many of the machines. In the past two years, the Pfister-Vogel Leather Company, of Milwaukee, which has been very active in safety measures here noted only two fatalities. One of these happened after the safety guard was removed and was being repaired.

Employees' Wash Rooms. Sanford De Hart. Industrial Management, February, 1923, Vol. LXV, No. 2, pp. 118-120.

Describes, with illustrations, the advances in industrial sanitation during last few years. Well equipped wash rooms, with soap and towels furnished, and kept scrupulously clean, are now considered necessary, not only for hygienic reasons, but as aids in cheapening production, lessening maintenance costs, securing better employees and increasing efficiency generally. In many states the law obliges employees in some industries to furnish wash rooms and specifies the required equipment. In the more progressive concerns, a lavatory, or at least a faucet of hot and cold water, is provided for every employee. In the same room lockers of the perforated type are installed. A special janitor is in charge of the room and keeps everything clean and in order.

Industrial Dermatoses. H. N. Cole, M.D., J. R. Driver, M.D. The Journal of Industrial Hygiene, February, 1923, Vol. IV, No. 10, pp. 425-432.

Presents in the main a classification of industrial dermatoses according to their predisposing causes and their exciting causes. These may be outlined in the following manner:

A. Predisposing causes:
   1. Personal susceptibility or perhaps a type of anaphylaxis. Once poisoned the individual's susceptibility to that disease is increased.
   2. Lack of oil in the skin increases susceptibility.

B. Exciting causes:
   1. Climate. Especially where excessive perspiration results, thus exciting dermatoses.
   2. Temperature. May cause excessive evaporation and dryness of skin.
   3. Mechanical pressure from constant contact.
   4. Parasites.
   5. Mechanical—classed as dermatocanioses—and differs from mechanical pressure in the mere presence of dust, powders, filings, etc., in the air.
      a. Powder particles clog pores.
      b. Mettalic dust.
      c. Trinitrotoluene dermatitis.
      d. Cutting oils.
   6. Chemicals—fatty acids, sulphuric acid, formaldehyde.
   7. Factors in personal hygiene as soaps, brushes, etc.
   8. Destructive rays from the X-ray and radium.
   9. Bacteria—as anthrax and others.

Discusses also diagnoses of symptoms and treatments. Stress is laid on prevention by compulsory use of showerbaths and fresh clothing. Prophylactic measures by McConnell are given in full and consist in hygiene procedure to be followed from time of entering plant to time of leaving. In plants in which McConnell's measures were enforced, after eight months no industrial dermatoses were found. While in plants where the measures were adopted but not enforced, twenty per cent of the men still had dermatoses.

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This journal is devoted to the scientific study of personnel. It publishes original researches in the applied sciences that contribute to our knowledge and our effective direction of people at work.

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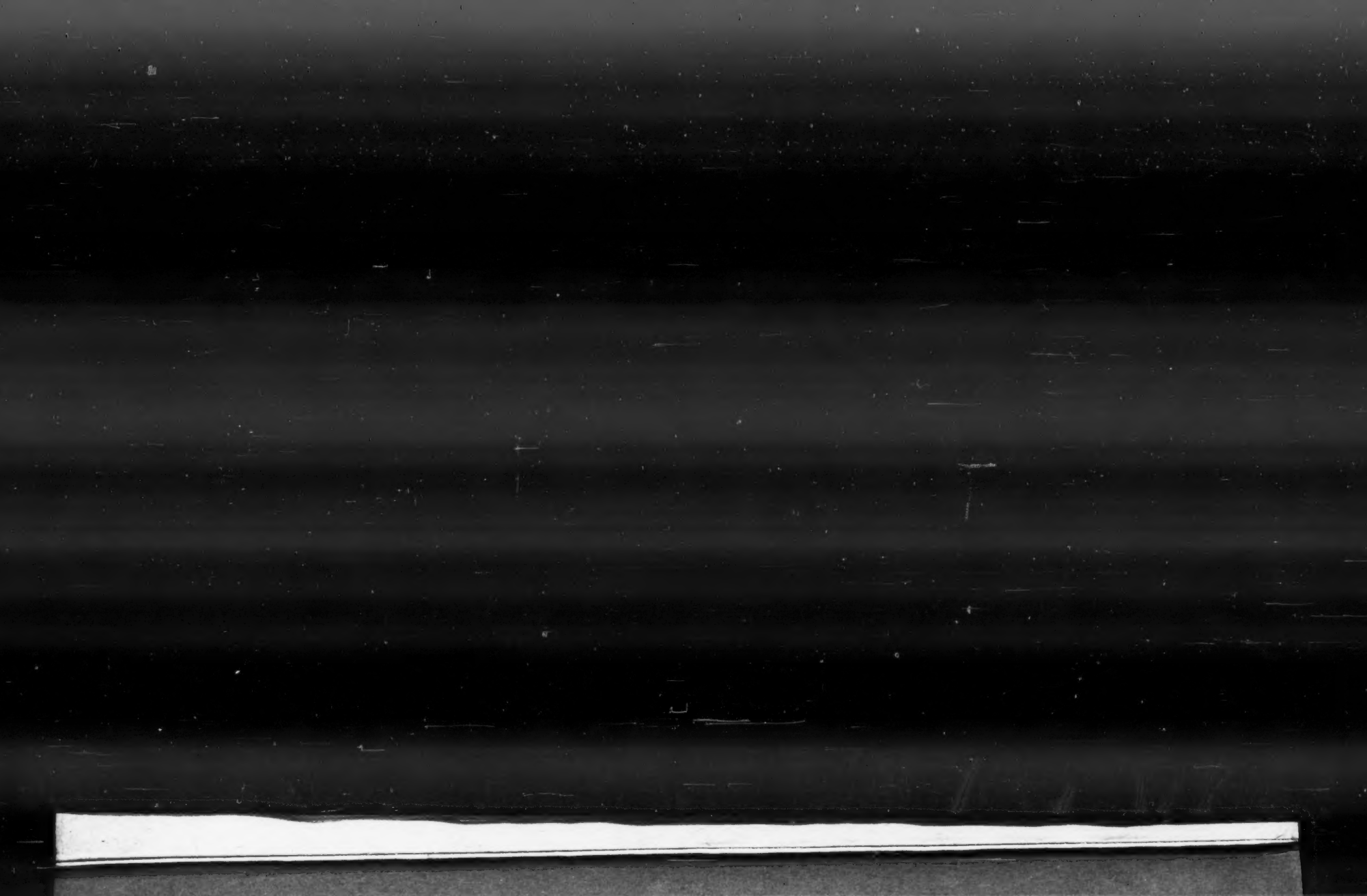
Successful personnel administration consists in making effective and satisfying adjustments between men and their work. Such administration demands judgment based on knowledge of the conditions under which people work productively and happily. It is increasingly important for the administrator to know the methods and results of scientific studies of the human being at work. To make such studies currently available is one of the functions of the JOURNAL OF PERSONNEL RESEARCH.